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The Legacy of Our Lands



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(Cover and illustration above) Jim Ayccock's photographs of wall murals on the fifth floor of the Department of the Interior building, painted by the well-known American artist, John Steuart Curry, in 1939. The cover depicts the Oklahoma land rush, and the illustration above represents a home-steading family scene.

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America Zoo

The Legacy of Our Lands


U.S. Department of the Interior ★ Conservation Yearbook 11 ★ Special Bicentennial Edition 1975-'76

"The Gift Outright"

The land was ours before we were the land's.
She was our land more than a hundred years
Before we were her people. She was ours
In Massachusetts, in Virginia,
But we were England's, still colonials,
Possessing what we still were unpossessed by,
Possessed by what we now no more possessed.
Something we were withholding made us weak
Until we found out that it was ourselves
We were withholding from our land of living,
And forthwith found salvation in surrender.
Such as we were we gave ourselves outright
(The deed of gift was many deeds of war)
To the land vaguely realizing westward,
But still unstoried, artless, unenhanced,
Such as she was, such as she would become.

Robert Frost

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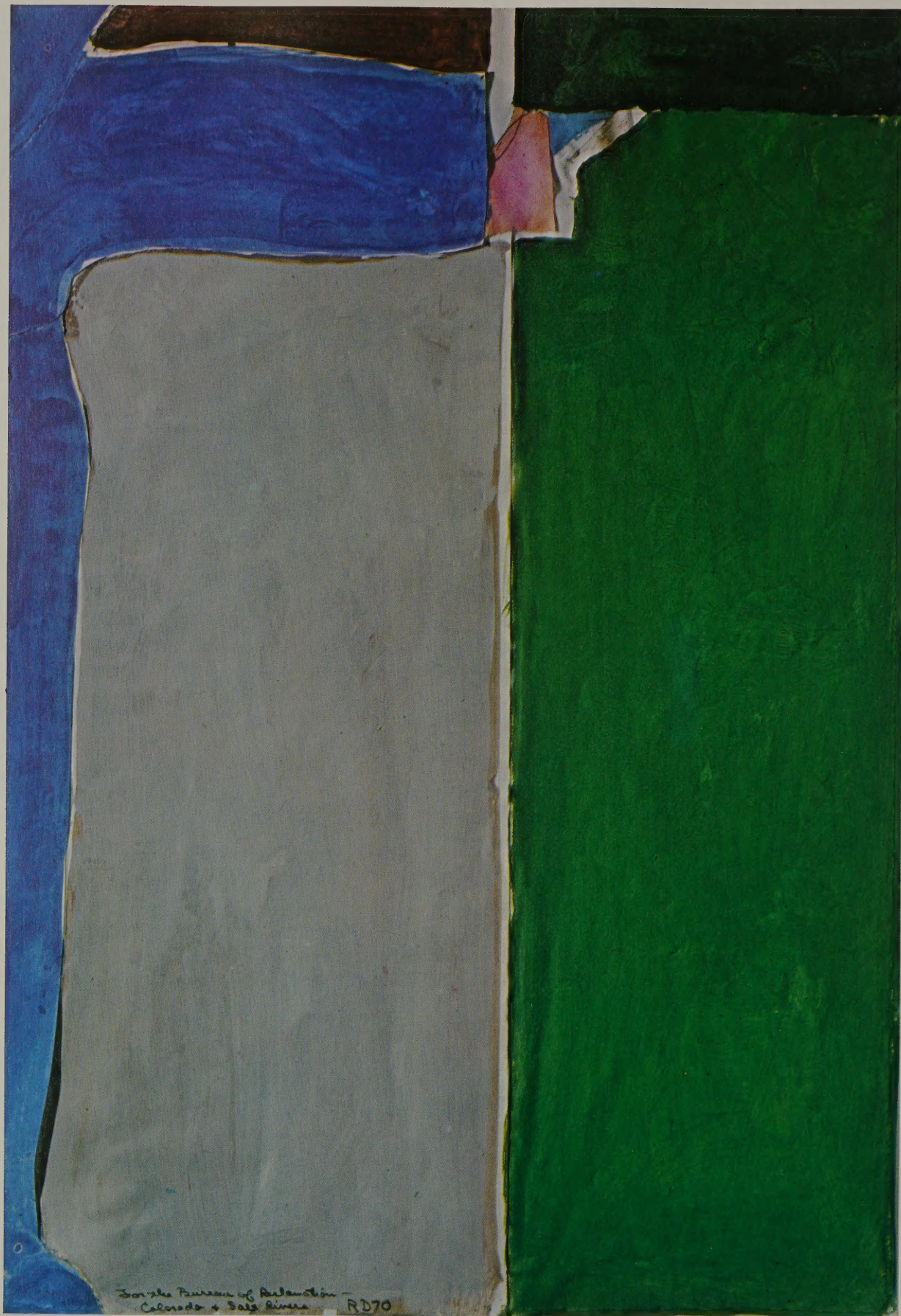




(Above) A student artist's interpretation of the Battle of Cowpens, 1781, a strategic southern victory for the Americans that helped lead to the surrender of Cornwallis at Yorktown. Done by Bruce Barkley for the National Park Service.

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A view of the lower Colorado, by Richard Diebenkorn, from the Bureau of Reclamation's collection.

Introduction

For 200 years we have lived under one system of Government. Our Flag flies over more than 3,500,000 square miles of land. Well over a million square miles of that expanse is land administered by the Federal Government as public domain. This is the land legacy of the American people. Almost half of all these public domain lands are under jurisdiction of the Department of the Interior.

This book is in part about the Department. More broadly, it is about the land's basic resources and policies affecting the public lands.

The land is our heritage. The attitudes we have held helped determine this heritage. These attitudes led first to settlement, then to Revolution, then to territorial expansion, and to a series of resources policies, some of which are still in effect. Our policies and attitudes toward resources in earlier times had serious effects in particular upon the fate of the American Indians. Their story is a part of the story of the land itself. The land has brought out the best in Americans, and sometimes the worst. But our people and resources are part of the same package that we call the United States of America. The relationship of land and people is the theme of this volume.

Its space limitations allow only a glimpse of events that went into the making of major public land policies. But it provides insights into what brought the people and the land to our 200th year as a Nation. Public pressures fluctuated over the course of those two centuries. Public land and Indian policies reflected the pressures. The wild, rough land was viewed as an enemy to be conquered. When the land finally was tamed in the process of consolidating a Nation, we then realized that the seeming endless abundance of resources is, after all, finite.

Looking backward can provide a vantage point for looking forward. That is what we attempt in this book.

This volume opens the door to questions of importance to our future: What are the origins of the resource policies and the programs that affect us today? What motives inspired them? Have times and events made some of our programs and priorities obsolete? Do we need to set some new priorities in resources management to balance the equation between a sound economy and a sound respect for the environment?

In the Department's early years, people were rushing to settle the West. They reveled at spanning the continent on iron rails at the fast clip of 30 miles an hour. Coal was the prime energy source. The height of technology was the coal-fired engine that converted water to steam. The Department granted the right-of-way and other parcels of land to railroad companies, under terms of railroad land grant legislation.

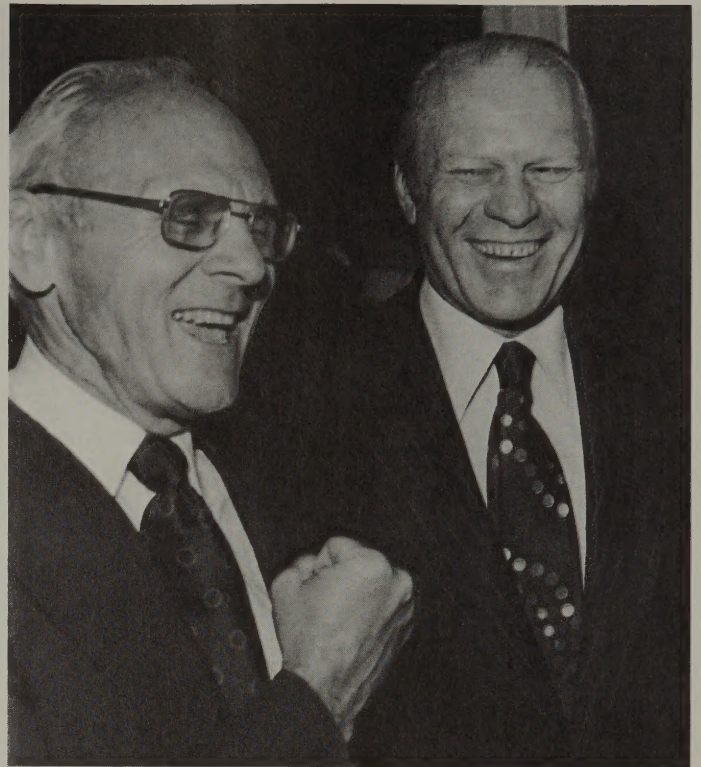


During most of the 19th century, public land policy leaned toward non-Federal ownership of lands. This encouraged settlement and development. Lands most promising for mineral development, agriculture and townsites were settled earliest. Later, heroic reclamation efforts marshalled the limited water resources of the West. That opened still more land for settlement. When public land became less abundant, pressure developed to withdraw some of the more fragile and scenic areas as national parks, wildernesses and special sites for protection by the Federal Government. Therefore, the public land concept gradually has evolved somewhat differently than envisioned 200 years ago.

Today, the challenge in natural resources is not to conquer Nature but to live with her. We will continue to use our natural resources but more carefully than in the past.

Energy resources are an overriding concern in this decade. The word "energy" is fairly new as a national issue. But it will be a key word for a long time. Our way of life has been underwritten as much by the low-cost energy-producing capabilities of our country as by any other single factor. Energy capacity affects agricultural competence and industrial productivity, both of which govern our standard of living.

In recent years the Interior Department has played a major role in the energy picture. We manage great areas that contain energy resources — coal, natural gas, oil, water, uranium, among the most important. Because of that responsibility, the Department has become active in energy research. It has stimulated research into new technologies for better, cleaner use of fossil fuels. It has inaugurated programs for learning more about how to extract oil from shale and keep the cost within reach of the consumer. It has activated research into converting coal directly to oil and



gas for easier, cheaper and cleaner transfer to the consumer. It has encouraged, by demonstration projects, the recycling of wastes into energy. It has entered into cooperative research with numerous foreign countries in such energy-related endeavors as taking the pollution out of coal-burning; reclamation of mined lands; and improvement of health and safety in mining operations.

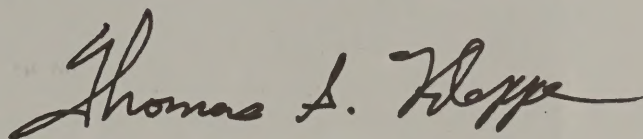
At the same time, the Department has helped spark public awareness of the possibilities of land-use planning. We are working to assure that development of resources is accomplished in an environmentally sound way. We are particularly concerned about ways to extract needed oil and gas resources from ecologically fragile areas such as Alaska and the offshore fields of our Outer Continental Shelf. The Department has spearheaded space satellite observation of the condition of the Earth, to monitor the health of timberlands and waterways and forecast potential future

trouble-spots such as earthquake-prone areas or other unusual changes in the earth's crust that would affect life forms. It has promoted research into water desalination to assist in regional water-use planning, domestically and in other countries. The largest de-salting plant in the world is under way in Arizona to assure that our neighbor Mexico receives good water from the flow of the Colorado. Department experts in various management and technical specialties literally have been all over the globe to assist the developing world. Where it is more feasible to bring people to the United States, the Department has hosted a stream of foreign experts and students.

The basic mission of the Department of the Interior remains the same as it was at its founding in 1849 — to oversee the public estate. But there is a world of difference in the way the task is approached now from the way it was handled then. The complexity of human needs, resulting from the complexity of human

knowledge today, has elevated resources management and development to a combination of physical and social sciences.

The mission and the message seem clear: Use our resources only to the extent we need them, without waste; provide for replenishment in every instance wherein they are renewable; and plan ahead. By these precepts we will maintain something worthwhile to bequeath to future generations of Americans.



Thomas S. Kleppe
Secretary of the Interior





Egrets over Topock Marsh, by Chen Chi, from the Bureau of Reclamation's collection.

In The Beginning There Was Land



"Plenty of good land, and liberty to manage their own affairs in their own way, seem to be the two great causes of the prosperity of all new colonies." Adam Smith — *Wealth of Nations*

There was no single, overriding cause that led to the American Revolution.

Taxation without representation and the chafings of British trade restrictions under the reign of George III were the sparks that actually ignited open rebellion. Yet, there were also land-related problems. The frontier had gradually stretched to the Appalachians, far beyond the earlier line that ran roughly north and south from mid-Massachusetts to eastern Georgia. Colonial Government was allowed loose rein during the first century and a half of British rule. Consequently, development of areas inland from the coast took place with minimal guidelines from the Crown. The early frontiersmen were so remote from regular contact with officialdom that they learned to function quite independently and began to develop their own unwritten codes for dealing with the Indians. Even their lifestyles differed greatly from the more settled areas of America.

Over the course of a century and a half of rugged colonizing, Americans became different in many ways from their English forbears and their English cousins. They had melded into the total environment of this vast, verdant land, influenced by its geography, topography, climate and seemingly endless store of natural resources. If they acted ruthlessly in expanding their domain, it was because the land itself was often cruel in its wildness. They became independent in thought and innovative in spirit because survival required it.

British colonial policy under a succession of monarchs had encouraged independent thinking in America. The Crown was eager to cultivate colonial areas, and therefore land grants for permanent settlement were generous. This was a different approach to empire-building in America than that of France and Spain. To those countries, settlement was secondary to their real goal of acquiring resources for trade — primarily furs for the former, gold for the latter. In contrast, the English settler came to stay, often a refugee from his own country for religious or economic reasons, but encouraged to settle in America by a government in England that saw advantages in getting rid of problem people while attaining a solid foothold for resources development in a promising area of the New World.

Speculators as well as settlers were encouraged to break new frontiers and were rewarded with grants or other acknowledgment of claims. Colonial trade was allowed to flourish and immigration was easy. Local self-government came early in the form of elected assemblies, although the colonial Governors were appointive.

As the decades rolled on between the time of the first English settlements and the mid-18th Century, America was becoming an enterprising and reasonably affluent society. It was a prototype of the Adam Smith concept of the prosperous colony.

(Cover) A Thomas Moran.

(Below) Frederic Remington, American artist and sculptor, was noted for his amusing style of portraying pioneer life and times.





(Top, Left and Right) The almshouse in 18th Century Philadelphia was probably more comfortable than the average pioneer home.

(Center) The Spanish influence was strongly felt by Indians of the Southwest. Missionaries followed the seekers after gold, and this Mission of San Xavier del Bac in Arizona, "white dome of the desert", still stands in the heart of Papago country.

(Bottom) Marker at Arkansas Post National Memorial, all that remains to commemorate this French trading post on the Arkansas River close to where it joins the Mississippi. The *Arkansas Gazette* began its publishing history here in 1819, and the post was the starting point for the first overland road into the interior of the Louisiana Purchase.



THE FRENCH PERIOD

The Regent of France authorized a settlement at the Post of Arkansas in 1722. These early settlers were on good terms with the Quapaw Indians who "exhibited a great spirit of friendliness and hospitality toward the French". Cotton was introduced in 1740.

In 1751 the settlement was strengthened. The French Government sent a number of girls as wives for the settlers "with a dowry of a cow and calf, cock and five hens, gun and ammunition, axe and hoe, and a supply of garden seed".

Land Speculation 18th Century Style

Land speculation — the equivalent of today's stock market for investors — was a powerful influence on westward expansion. In the decade before the Revolution there were 12 land development plans being pressed by ardent sponsors. These interests descended upon the London ministries and crowded the lobbies of Parliament seeking political support that would enforce their tenuous claims to the land. Among the investors in westward lands were Benjamin Franklin and George Washington.

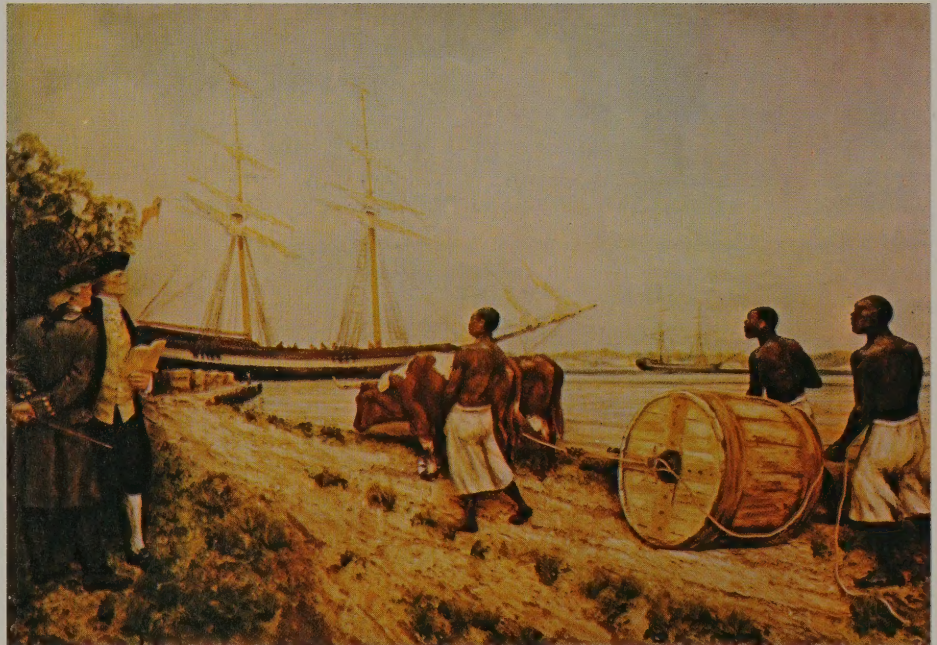
Lord Dunmore, a Governor of Virginia, wrote to England of his inability to stem the westward movement: "I have learned from experience," he reported, "that the established Authority of any government in America, and the policy of Government at home, are both insufficient to restrain the Americans; and that they do and will remove as their avidity and restlessness incite them. They acquire no attachment to Place; but wandering about Seems engrained in their Nature; and it is a weakness incident to it, that they Should forever imagine the Lands further off are Still better than those upon which they are already Settled . . . They do not conceive that Government has any right to forbid their taking possession of a Vast tract of Country, either uninhabitated or which Serves only as a Shelter for a few Scattered Tribes of Indians. Nor can they be easily brought to entertain any belief of the permanent obligation of Treaties made with those People, whom they consider as but little removed from the brute Creation."

The encroachments of the white settlers affected territory claimed by the Iroquois Nation, which encompassed lands stretching from Lake Superior to the Tennessee River and from the Hudson to the Mississippi River. To the South, white movement affected other tribes, too. The Cherokees, the "mountaineers of aboriginal America," were the second strongest force along the Proclamation Line, claiming lands of the present States of Kentucky and Tennessee, western South and North Carolina, Virginia, West Virginia, and parts of northern Alabama and Georgia. The Shawnee and Delaware tribes occupied land between the Iroquois and the Cherokees. Ohio Indian groups as well as the Cherokees, Iroquois, Shawnee and Delawares hunted in the area known as Kentucky, although they did not establish many villages there.

It was into these areas that frontiersmen — explorers like Daniel Boone — came.

(Below) A typical Southern port scene in the American colonies around 1760, an area that had been wilderness roamed by Indians a hundred years earlier.

(Opposite Page) It is hardly likely that Daniel Boone usually looked as well put together as he does in this portrait with hound. Perhaps the illustration of Boone and his party, from old Army archives, is more typical.



The intrepid Boone was, in his own person and lifetime, the prime example of the restless Americans Lord Dunmore had described. Even his childhood had been migratory. When he was a small boy, his family had moved from eastern Pennsylvania, where he was born, to the back country of North Carolina. Stories about a wonderful land beyond the Appalachians spurred his wanderlust, leading him to Kentucky as a young man and later, in old age, as far as Missouri. Speculators relied upon his expert knowledge of the lands he explored, and he was a leading force in settling Kentucky.

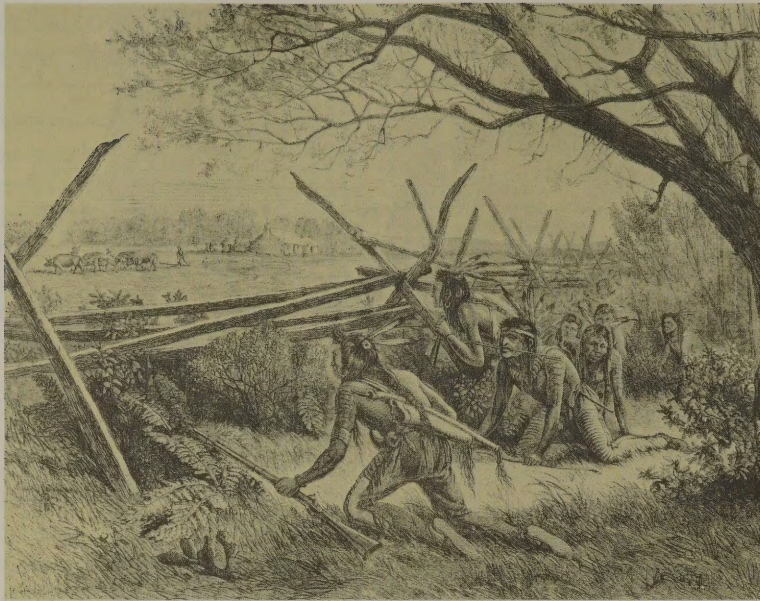
Land and Indians

"Much welcome, Englishmen" Samoset reputedly said to 44 surviving members of the original Mayflower Company. He had learned English from fishermen of Devonshire — and had probably learned a little Dutch and French, as well, from fishermen of the low countries and Brittany. These European fishermen, working off the New England coast, had become familiar to the Indians long before permanent English settlement of America was attempted.

As long as the European intruders did not try to crowd the Indians out of their customary hunting and fishing grounds, peaceful co-existence was the order.

It became the practice for the English to buy land from the Indians. The Indians, however, often misunderstood such transactions, regarding "sales" as arrangements whereby the white man would be allowed to use the lands in the same way the Indians used them. The Indians did not anticipate that they were to be excluded from further use of the areas they sold. It was this kind of misunderstanding that led to raids on Jamestown in Virginia in 1622 and 1624, and then to the Wampanoag King Philip's War throughout New England in 1673-75, and to attacks on other white settlements.





Most of the Indian tribes of the Atlantic seaboard area had been reduced to remnants by the end of the 17th century. Some of the colonies set aside reserved areas for them. Several of these small reserves still remain in Maine, Delaware and Virginia, for example — the earliest signs of a reservation system that was to be adopted by the United States.

Then, by the early 1760's, came the French and Indian War, so called because many Indians joined with the Canadian French against the British. Colonial expansionism had by this time resulted in considerable stress between the Americans and the Indians in the frontier regions, which were areas into which the American colonists were intruding. The French and Indian War in North America, although related to a larger power struggle on the European continent, was intensified in North America because of Indian involvement.

In an effort to mollify the Indian tribes, the British Crown imposed strict rules on the American frontier to prevent further encroachment upon the Indians by the colonists.

This was the situation when George III assumed the throne of England in 1760. If anybody gained from his reign, insofar as the American colonists could see it, it was the Indians.

Despite the broad French and Indian alliance, by 1763 the French were defeated in the struggle for dominance over eastern North America. As a result, England acquired much of present-day Canada as well as the area north of the Ohio.

This extension of the British Empire did not bring more peaceful relations with the Indians.

The ink was hardly dry on the settlement treaty when some British leaders realized that Britain could not afford to garrison its new-won lands with the strength needed to maintain law and order. The vastness of the land area now under British control created a situation for England that required a shift in her traditional expansionist policies. The tenets that had permitted colonists easy freedom

to spread out and to acquire private land holdings became obsolete.

One Englishman, arguing against acquisition of Canada during the treaty negotiations, forecast: "If the people of our colonies find no check from Canada, they will extend themselves almost without bounds to the inland part . . . What the consequence will be, to have a hardy, independent people possessed of a strong country, communicating little or not at all with England, I leave to your own reflection. I shall only observe that, by eagerly grasping at extensive territory we may run the risque [sic] and that perhaps in no very distant period, of losing what we now possess."

Rumbles of Rebellion On the Frontier

As a temporary measure to buy time to formulate a land management policy, George III issued the Proclamation of 1763 prohibiting "until our further pleasure" the issuance of warrants of survey or patents "for any lands beyond the heads or sources of any rivers which fall into the Atlantic Ocean from west or northwest." The 1763 edict also provided that the Indians "should not be molested or disturbed in those areas that had not been ceded to or purchased by the English." The King further forbade "on pain of our displeasure, all our loving subjects from making any purchases or settlements whatsoever" on lands reserved for Indians "without our special leave." He ordered all persons who had "willfully or inadvertently" settled beyond the proclaimed settlement line to remove themselves.

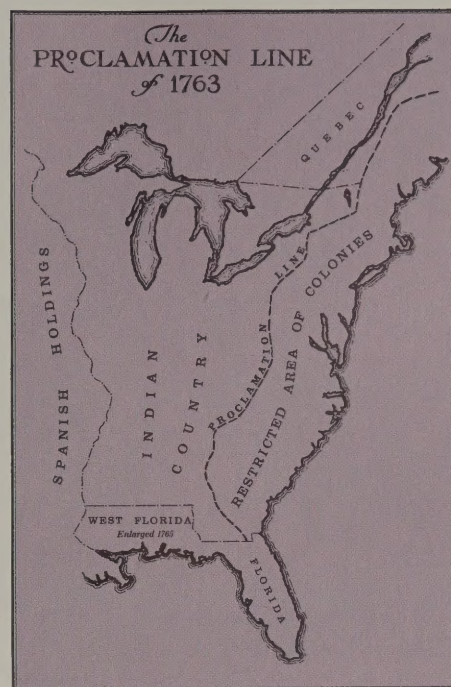
The Proclamation further stated: "We . . . declare it to be Our Royal Will and Pleasure . . . to reserve under Our Sovereignty, Protection and Dominion, for the Use of the . . . Indians . . . all the Lands and Territories lying to the Westward of the Sources of the Rivers which fall into the Sea from the West and North West."

Nevertheless, the combined efforts of the British Crown and the Indian warriors — many of whom viewed the British as allies against the colonists — could not hold back the rising tide of trans-Appalachian migration. Washington viewed the Proclamation of 1763 as a "temporary expedient to quiet the minds of the Indians." He advised that "any person, therefore, who neglects the present opportunity of hunting out good lands, and in some manner marking and distinguishing them for his own, will never regain it." Speculators focused most particularly on the Ohio Valley, intruding beyond the Proclamation Line.

From the point of view of both settlers and speculators, the Proclamation was untimely and unseemly. The colonists, after long years of gradual westward movement, had established a kind of springboard from which they were ready to move across the mountains. The Proclamation seemed to them poor reward indeed for developing and settling the North American empire, and for the suffering endured in the French and Indian War.

Defiance of the Proclamation was frequent. In retaliation, Crown officials warned settlers that they would be left to the mercy of the Indians.

Pennsylvania decreed death without benefit of clergy for settling beyond the proclaimed limits and soldiers were turned out to drive off the land seekers. Despite these measures, one colonial official estimated the number of settlers in his area had doubled between 1763 and 1765.



(Opposite, Bottom) The famed Ottawa chief, Pontiac, a formidable foe of the British during the French and Indian war, met his death in 1769 at the hands of an Illinois Indian reportedly bribed by an English trader to murder the chief.

(Above) The boundary that came to be known as the paper line.



By the late 1760's it had become all too apparent to the Crown that the Proclamation of 1763 was nothing more than a paper line between colonial and Indian lands. England turned then to negotiating a series of treaties with the Indians, exchanging lands of the old frontier for recognition of Indian rights "west of the sources of the rivers which fall into the sea." The Treaty of Hard Labor with the Cherokees and the Treaty of Fort Stanwix with the Iroquois were to have the most significant impact upon the future of the United States. In effect, they moved the old frontier westward, establishing an area that, within half a century, was to become the new frontier and the scene of renewed Indian warfare.

(Above, Left) Purportedly a painting of Joseph Brant, Mohawk chief. Brant, well known at home and abroad, was educated at a school for Indians that was the forerunner of Dartmouth College. He was instrumental in bringing Mohawk support to the British during the French and Indian War. He remained pro-British during the Revolution, although after the war he aided in securing treaties of peace between the United States and several western tribes. He died in 1807 on an estate on the banks of Lake Ontario which the British Government had provided him. National Archives photo.

(Right) News item from Philadelphia, August 1775.



WE hear from Westmoreland, in the western part of this colony, that last Thursday fe'nnight about 50 Indians of the Six Nations came to that place, and incamped at a small distance from the settlement; the next day they came in and delivered a message, which was to this purpose — that they were sorry to hear of the difference which subsisted between Great Britain and the Colonies — that they should not take up the hatchet on either side — that they meant to be at peace with the English as long as the stream ran down the Susquehannah River — that should differences in the future arise between us and them, they would try every gentle and healing measure to obtain redress of the grievance.

The new Indian boundaries might have sufficed to maintain a peaceable buffer zone between Indians and settlers if George III had not taken another major step toward organizing his Empire, further antagonizing the American frontiersmen.

He placed his imprimatur in 1774 on Parliament's Quebec Act, a measure aimed at assuaging the French who had become subjects of the British Crown by the Treaty of Paris. To the French Canadians, it represented a charter of liberty, and laid groundwork for their support of England when the Revolutionary War finally broke out.

The Americans interpreted the Quebec Act as an affront. It provided the recent enemy with a large measure of self-government, sanctioned the use of French law in civil courts throughout Quebec, and offered full religious tolerance for Roman Catholicism, the dominant religion among the French. But most alarming of all was its provision to extend Quebec's boundaries west and south to the Ohio and Mississippi Rivers, an area of trans-Appalachia coveted by American land speculators.

The practical effect of the Quebec Act was to congeal American suspicion that the British Crown had little interest in the welfare and improvement of the frontiersman's condition. This Act, pinching the colonial sensitivity about land, is viewed as closely akin in effect to the "Intolerable Acts" that pinched colonial purses and political liberties. The French and Indian War, and the new tax policies of the British Government were factors in the ultimate break with England. Colonial expansion and Indian troubles had forced British troops and money into the French and Indian War. England decided that the colonies should help pay the costs of the French and Indian War, and the quarrel over taxation began.

Thus, in the long view of the causes of the American Revolution, frontier events cannot be discounted. Frontier attitudes toward land and land use, kept at least partially constrained under British rule, were unleashed by the Revolution to become a standard for the new Republic.

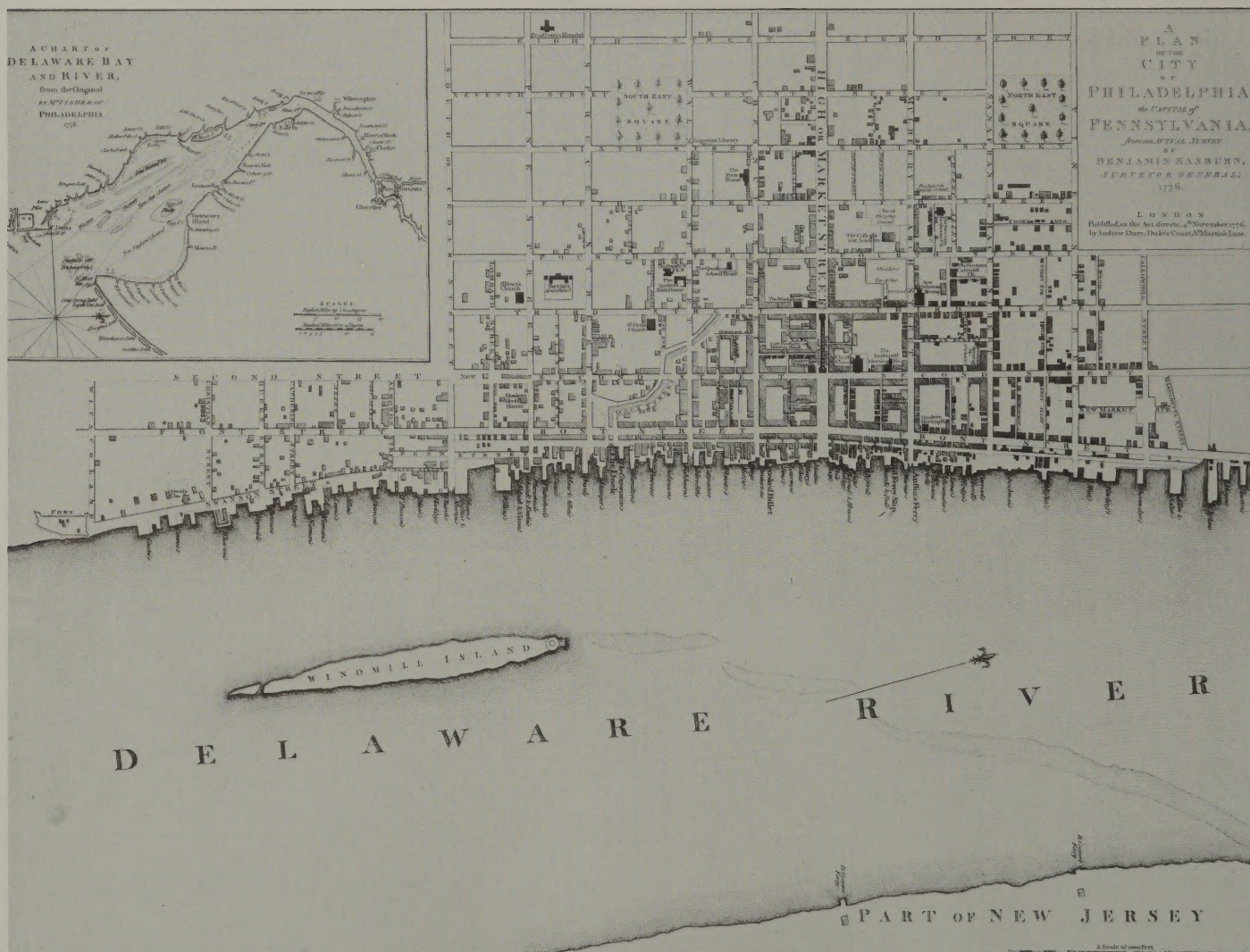
PHILADELPHIA
On The Eve Of Independence



You have arrived in Philadelphia. Your ship, the tall-masted schooner "Alison," has tied up at the bustling wharf at the foot of Market Street. On every side, sloops, schooners and barges unload casks and barrels, boxes and bales — tobacco, hides, silk, grain, the stuff of trade between America and the world. The British fleet has not yet closed the port of Philadelphia as it did Boston a few months ago.

This is Philadelphia, 1774. The First Continental Congress is in session, drawing up its "Declaration of Resolves" condemning the new constrictive policies imposed on the colonies by England since last year.

Even though the first thunderclouds of rebellion are on the horizon, Philadelphia is a fair city in 1774 — 92 years old, with a population of 35,000, a center of commerce. Its people boast that their town ranks second in size only to London in all the English-speaking world.





(Opposite Page) Street map of Philadelphia, 1776.

(Below) Arch Street Ferry. William Russell Birch (1755-1834), a painter and engraver trained in England, is particularly noted for his scenes of Philadelphia.





While history is being made, life is going on. This is market day. The cobbled streets are clogged with Conestogas and other country wagons, and with carriages, with riders on horseback and with pedestrians dodging the traffic. Small shop windows bid for the business of the farmers who have come to town with their produce. The apothecary advertises that his nostrums will take the measure of everything from headaches to boils to croup and will even act as a cure for toothache. Book stalls do a brisk business selling the latest volumes from Europe — a commodity soon to become scarce — as well as revolutionary tracts from Boston and other places where the movement for independence is raging.

It is exciting to be in Philadelphia, famed for its beauty, at home and abroad. Unlike London, which simply grew, Philadelphia had been built on a master plan, the first planned city in America. Wide, cobbled main avenues divide Philadelphia into quadrants. Within each quadrant lies an eight-acre park, making good on William Penn's promise to encourage a "greene countrie towne."

It is widely recognized that the extraordinary architects and builders who constitute the Carpenters' Company have achieved cultural and visual success with their stately public buildings. The State House (later to be known as Independence Hall), the Pennsylvania Hospital and Carpenters' Hall all contribute to the ambiance of this queen city. St. Peter's Church, Christ Church, and Old Swede's Church join with Quaker meeting houses to proclaim Philadelphia's reputation for religious tolerance.

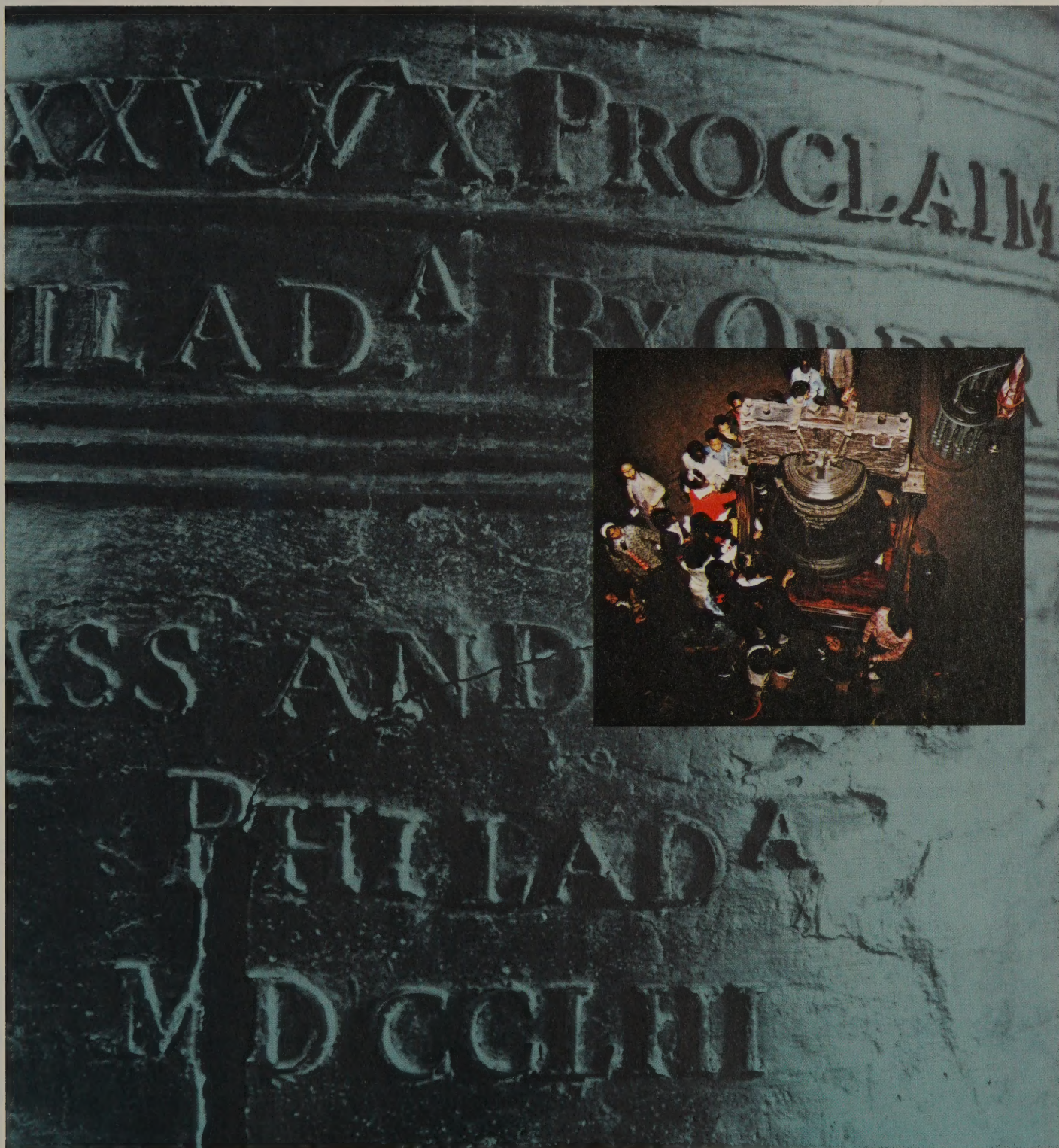
Brick homes and shops snuggle close to the street. Wooden signs swing gently in the breeze in front of shops where the family works on the first floor and lives on the second. Into the busy shops come the raw products from the waterfront; out come finished goods ready for sale.

And now you reach Third and Walnut Streets, where City Tavern serves as a combination inn, mercantile exchange, ballroom, concert hall and political club. You take a table by a small-paned window.

The food is good and so is the drink. Madeira from Portugal substitutes for water because one must beware of the dangers of malaria. The menu proffers a wide range of selections from the basement kitchen — chicken in jelly, artichoke bottoms, egg pie, and a variety of cheeses. It is a good meal, and it puts you in the mood to sit for a long time, watching the town bustle about its business, while you muse upon these times.

(Opposite Page) A view of Philadelphia from New Jersey.

(Below Inset) A school group examines the Liberty Bell.



Two similes of the Signatures to the Declaration of Independence July 4 1776

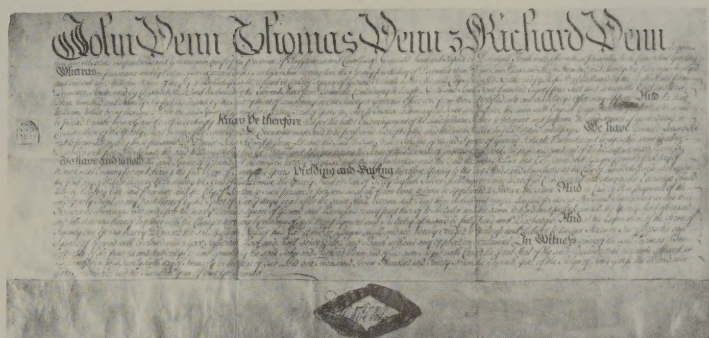
John Penn John Hancock John Har
Wm Pa
Hoyg
Geo Read Wm Hooper Sam Adams
Thos Nelson
Charles Carroll of Carrollton Ellbridge Gerry
Thos M. Kear Roger Sherman Sam^a Huntington
Whipple Thomas Lynch Jun^r
Taylor Josiah Bartlett Benj Franklin
William Rich Stockton John Morton
Wm W. Eliott Jas Witherpoole Gro Robt
Thos Stone Samuel Chase Robt Heat Paund
George Wythe Matthew Thornton
Fran^s Lewis Th Jefferson Menj^d Harrison
Lewis Morris Abra Clark Phil Livingst
Casar Rodney
Thos Middleton Tra Hopkinson
Geo Walton Carter Braxton James Wilson
Richard Henry Lee Tho Weyward Jun
Benjamin Rush John Adams Robt Morris
Lyman Hall Joseph Hewes Button Gwinnett
Francis Lightfoot Lee
William Ellery Edward Rutledge Ja Smith

(Opposite Page) A facsimile of the signatures to the Declaration of Independence.

(Below) Deed of John, Thomas, and Richard Penn, 1736.

This is the Philadelphia of Benjamin Franklin, now a prominent political figure. His mark is everywhere. He prudently organized Philadelphia's first fire company, the Fellowship, back in 1736, and he also shrewdly founded the first fire insurance business. He bought the *Pennsylvania Gazette* when it was a rundown newspaper, and shaped it into one of the twelve largest in America. He organized Philadelphia's first social, debating and intellectual club, the Junto, later to become world-famed as the American Philosophical Society. He established a non-sectarian school, the Academy, which was the forerunner of the University of Pennsylvania. Franklin is also a prominent member of the new Continental Congress.

Too bad, you think, that a town so elegant and so vital is also beset with problems so common to all cities. Perhaps some day they will discover a way to dispel the air pollution that comes from mass use of coal and wood for heating and cooking, combined with the humidity that hangs along the Schuylkill River. Perhaps the drainage problems — resulting in putrefying pools of water stagnating in some corners of the town — will be corrected. Perhaps some day the medical specialists will find a way to fight the rampages of smallpox and other death-dealing infections that have swept through crowded areas. Perhaps there will be a better means of keeping clean the public water pump areas throughout the city where citizens come for drinking, washing and bathing. Only the wealthy as yet have their own private wells and pumps.



(Below) Second Street, Philadelphia, showing Christ Church.

Perhaps, too, crime will decrease. There was a day when the city watchman, on guard at his wooden watchbox on the street, did not have to concern himself so frequently with muggings and assaults. Perhaps he will be able to go back to his task of lighting the whale oil street lamps without carrying a big stick. In earlier times, you remember reading, the city watchman went "round ye town with a small bell in ye night time to give notice of ye time . . . and the weather, and if anie disorder or danger happen by fire or otherwise . . . to acquaint the constable thereof."

But before these improvements can take place, Philadelphia will become a rallying point for the War for Independence. The State House will be the scene of the signing and adoption of the Declaration of Independence within another two years. The Marine Corps will have been organized here in 1775. Eventually the streets will be devoid of business activity, and within three years the British will occupy this fair city, commandeering the public buildings and private homes.

Enjoy a good meal today. Not for another four years or more will Philadelphia be as carefree as it seems today.



Century I, U.S.A.





Its first hundred years might be called survival test time for the United States. From the moment independence from England was declared until the Union became solidified during the reconstruction after the war between North and South, there were skeptics who doubted that the Republic of the United States of America would endure intact.

The vastness of the land and the richness of its resources were a mainstay. So was the public land policy: that public lands would be acquired by the United States Government in trust for all the people; would be given away or sold cheaply to those who would settle them; and, when settled, the land would be admitted to the Union as States equal in rights to the original thirteen.

The concept of national ownership of land evolved from the attitudes toward the land and property rights that emerged during the colonial period. It was used first to break the bonds of colonialism, when the Continental Congress offered land bounties to recruit a continental army. It appeared again as a concept under the Articles of Confederation and was solidified under the Constitution. While the "second war for independence" was being waged in 1812, a General Land Office was created to supervise disposition of the public domain. As more and more lands were acquired by purchase or otherwise, the need for an administering agency led to creation of the Department of the Interior.

The continental expansion was completed during America's first 100 years with the Louisiana Purchase (1803), the acquisition of Florida (1819), annexation of Texas (1845), the Oregon acquisition (1846), the Mexican Cession (1848), the Gadsden Purchase (1853) and the purchase of Alaska in 1867.

Let us now take a brief glimpse at public land issues and trends that developed during America's first hundred years, selecting a few examples to illustrate the impact that the public land concept has had upon American lifestyles.

Land in the Making of an Army

In retrospect, one must gasp at the bravado that enabled the Continental Congress to authorize a committee to draw up a Declaration of Independence. The colonies had no organized armed forces. Although militia had been training in several States, they were part-time soldiers from the field and the shops. Some were the "summer soldiers and sunshine patriots" Tom Paine described. The fleet was comprised of merchant and fishing vessels. Ammunition was for the most part smuggled or purloined from the British colonial armories.

The success of the militia at Lexington and Concord in 1775 gave heart to those who felt that the Crown's oppressions were intolerable to free men. But all-out warfare was to be another matter, and the Congress realized this fact after the disastrous Battle of Long Island.

What was to be done? Knowing the yearning for freeholding, George Washington, who was Commander-in-Chief of the militia, prevailed upon the Congress to organize the Continental Army for a long pull, offering his opinion that "the addition of Land might have a considerable Influence on a permanent Enlistment."

The land bounty device was first directed toward Hessian mercenaries who had hired out to the British as supplementary forces to the limited standing army England retained in America. An offer was broadsided in a proclamation addressed to "all such foreigners who shall leave the armies of His Britannic Majesty in America." About 5,000 of these 30,000 soldiers-for-hire deserted the British, lured by the promise of 50 acres for the rank and file and 800 acres for captains.

Having taken this step to blunt Britain's war-making strength, the Continental Congress turned to the matter of building its own military

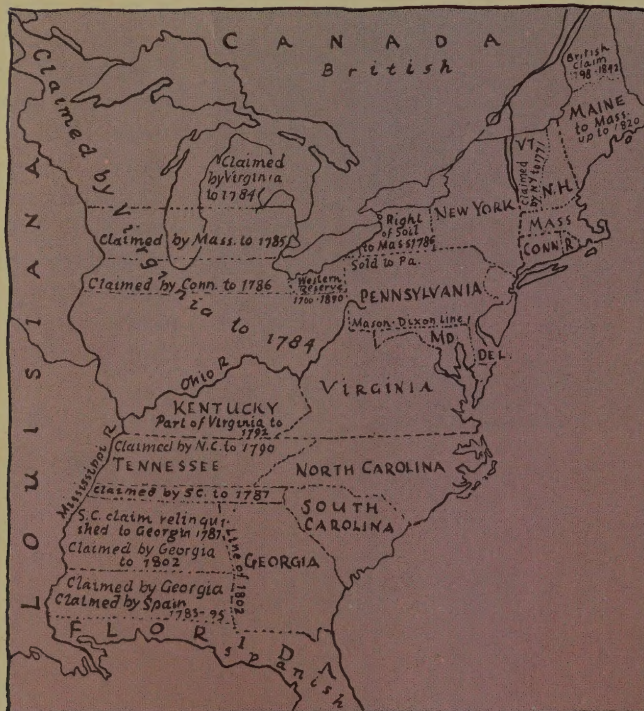
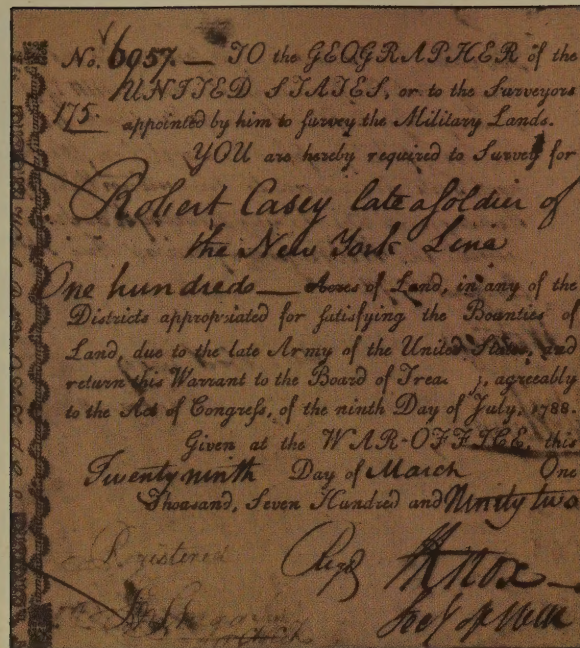
force. It authorized an 88-battalion fighting force to be raised by the States proportionately, offering both a small cash bounty (around \$10) and a land bounty for enlistment. Many an American freehold was later established as a result of the offer, which provided 100 acres for privates and non-commissioned ranks; 150 acres for ensigns; 200 acres for lieutenants on up to 500 acres for colonels.

The Congress expressly stated that the United States would provide the land for the bounties — land which, in reality, it did not own under the loose alliance of States at that time. It planned to use lands outside the colony boundaries for this purpose.

Seven of the thirteen States were in possession of royal grants beyond their borders (although some of the grants were ambiguous and overlapping claims into Trans-Appalachia). These States were Massachusetts, Connecticut, New York, Virginia, North and South Carolina, and Georgia. The remaining six of the Thirteen were termed "landless" — because they had no claims beyond their own boundaries. This condition of landlessness caused some of the States — and most steadfastly Maryland — to balk at the land bounty recruitment device, fearing inability to make good the commitments to the soldiers.

Maryland insisted that there be agreement that the backlands were to be held in common by all the States. Her position was clearcut: "Expectation was formed by the People of our States that what was conquered from the Enemy at the Joint Expense of Blood and Treasure of the whole should become their joint property . . ."





Opposing the position held by Maryland were land speculators who were highly desirous of having the States retain their own respective royal claims. These speculations, for the most part, were based on grants which the governments of the landed colonies had issued. (It is noteworthy, however, that individuals whose land speculations were based on questionable purchases from Indians felt that their chances of retaining their claims would be better in the hands of Congress than with the State legislatures.)

Military reverses suffered by the American troops eventually broke the stalemate in Congress over the land issue. A compromise ensued. New York relinquished its tenuous claims to areas along the Ohio — claims rooted in an asserted sovereignty over the Iroquois, who, in turn, asserted a measure of overlordship over Indians in Ohio. Virginia offered to cede its claims, but with the restriction that previous private land acquisitions based on purchases of Indian title would not be recognized. With these and other compromises, there was sufficient agreement to put the Articles of Confederation into operation in 1781. Negotiations over some of the cessions were not completed until 1802, when Georgia, the last, finally signed over its claims.

It is clear that the issue of land was one of the major aspects of organizing politically and militarily for the War for Independence. The manner in which the issue was solved has had a significant bearing on American history from that time forward.

The color illustration on this page (by Steve Light) and the preceding color illustration of George Washington (by Robert Handville) are from a Bicentennial series, "Artists in the Parks" commissioned by the National Park Service.

The map at left roughly outlines the western lands claimed by several of the Thirteen States beyond their colonial boundaries at the time of the Revolution.

Creating the Public Domain: The First Land Ordinances and Surveys

The Revolution won, the United States, struggling to organize itself, once again turned to land as a resource. In fact, land was the only commodity it possessed. Under the loose alliance of States that was provided by the Articles of Confederation, the new Nation's first instrument of government, the Congress had no power to raise money. But the public domain concept began to take shape in the minds of the early leaders as a way out of the dilemma.

America had acquired from England more than 541 million acres of land in addition to the Thirteen States, and this acquisition became the original public domain.

Surveying The Land

Thomas Jefferson, while a Member of Congress of Confederation, was appointed chairman of a committee to plan for administering the public domain. His report led to enactment of the first two significant land laws in this country, the Ordinances of 1785 and 1787.

The immediate purpose of the Land Ordinance of 1785 was to raise revenues for the harried young Nation by providing for sale of the public lands. It fell short of this goal, but provided something else of lasting benefit: the first national public land survey and the establishment of allodial land titles — titles of absolute ownership not subject to feudal dues.

The system of clear and simple title to land clearly delineated became an important socio-economic factor in the growth of the Nation. Three steps for the settlement of an area were provided in the 1785 Ordinance: clearance of the Indian title, survey of the land, then public sale. Moreover, one section of each township was set aside for the support of public educa-



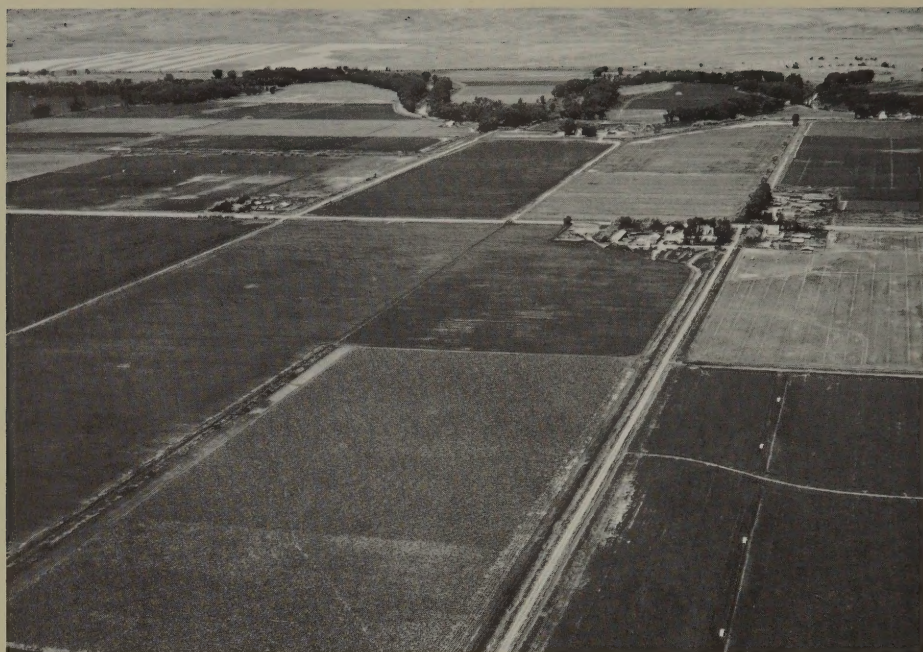
tion, the beginning of the concept of free public schooling.

The United States Public Land Survey that began with the 1785 Ordinance has had lasting impact upon the configuration of the American countryside, even up to the present time. It called for precise compassing, patterned after the custom in the New England colonies of rectilinear survey, a method far more legally durable than the "tomahawk survey" system customary in the South, which relied on natural features as points of reference.

As the public land survey progressed, the township was the basic surveying unit — an area six miles by six miles, divided into 36 sections, each a mile square, which, in turn, was divided into quarter sections. The quartering could continue until it became feasible to describe lots. The surveyors recorded their survey lines on plats and set forth details in field notes. These are the permanent official records which succeeding surveyors have used to re-run the lines and corners when needed.

(Above) This Currier and Ives portrayal of John Fremont is from the Library of Congress collection. It shows the explorer-soldier in the uniform of Major General. Following his highly successful explorations while a junior officer, he rose swiftly in the military service.

(Right) The rectilinear conformations of the fields, so clearly evident in this contemporary air view, are the direct product of early land surveys of the public domain.



Townships were disposed of alternately — one for sale in its entirety, the next auctioned by sections of 640 acres each — and all the parcels sold at \$1.00 per acre. Even so, the takers were disappointingly few in the beginning, when the money was sorely needed by the young Republic, probably because the prices were too high, sales were held at places far removed from the land being offered and because the blocks were too large for individual settlement. In time, about 1.1 billion acres of the national land estate were transferred to individuals, states and corporations.

The second key ordinance — the Northwest Ordinance of 1787 — proved to be a cornerstone of the Republic. It called for the creation of three to five States from the territory northwest of the Ohio River and bounded by the Mississippi, with a three-stage system of evolution into Statehood. The crucial element was its provision that the new States were to be fully equal in powers and stature to the Original thirteen. Thus, it assured people who sought to better themselves by moving to the frontiers that they would not sacrifice political rights in doing so.

The principles laid down in the 1787 Ordinance were also important in the formation of States that were to be carved later from additional western territories. It called for a progression toward Statehood and full political equality for any area that had acquired a population of 60,000. The first census was taken in 1790 to assure fairness in determining this eligibility requirement and a periodic, official national census-taking thereby became an important institution.

The public domain principle was further strengthened when the Constitution of the United States supplanted the Articles of Confederation, providing more centralized power to the Federal Government. Article IV, Section 3, of the Constitution gave Congress authority to admit new States to the Union and "to dispose of and make all needful rules and regulations respecting the territory or property belonging to the United States . . ."

By 1801, Thomas Jefferson had been elected third President of the United States. Within two years, he took a gamble in behalf of the Nation in buying the Louisiana Territory from Napoleon, who, by that time, was in dire need of capital.

Although the Louisiana Purchase provided the natural resource background the young Republic needed, it was not a wholly popular achievement. Some Members of Congress expressed the opinion that President Jefferson had exceeded his Constitutional prerogative. Other objectors claimed that the price — only a few cents per acre, but a total investment of \$15 million — was a foolish outlay for "a vast wasteland of trees."

Jefferson, however, saw in it something big for the future. He had set about to prove the point by launching an expedition to explore the region from the Mississippi Valley to the far Northwest. He chose his own secretary, Captain Meriwether Lewis, to head the expedition, and Lewis chose his friend, Captain William Clark, as second in command. Jefferson himself wrote the detailed instructions for the Lewis and Clark expedition, which called for astronomical observations, cataloguing of other natural phenomena, and recording of descriptions of the Indians.

The party started in May 1804 from St. Louis, traveled up the Missouri River, and reached the Pacific in November 1805. Their adventures are well chronicled as they journeyed northward through Mandan Indian lands and westward through the buffalo ranges, and Sioux country, and on to the Columbia River.

One of the purposes of the Lewis and Clark venture was to find a route to the Pacific and trade with the Orient. Although their travels did not reveal such a natural waterway, they contributed greatly to scientific knowledge, westward expansion, and even international relations. They substantially strengthened the U.S. claim to the northwest, altering the course of the struggle, particularly with Britain, for the area.

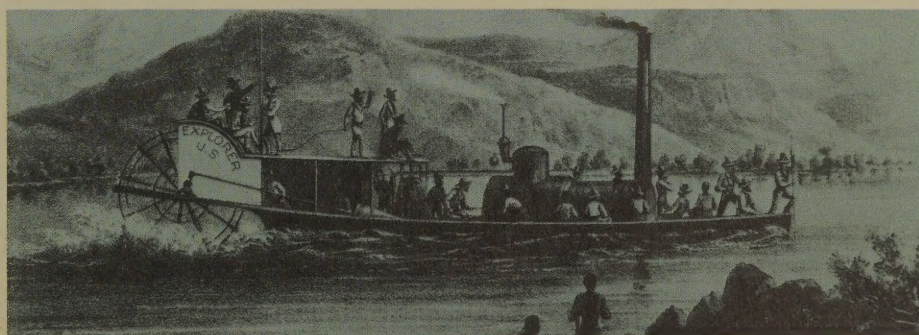


Scientific Explorations

The Lewis and Clark venture set a pattern for future American expeditions into the Western wilderness. It was the first foray into the West that contained any real commitment to scientific inquiry.

Other expeditions followed, out of urgent necessity to assert quickly and firmly the Nation's sovereignty over the new Louisiana Purchase, and, of equal importance, to determine precisely what resources it contained.

By 1820 no less than 30 organized expeditions had probed the new West, including two famous expeditions to the Central Rockies — those of Zebulon Pike (1805-7) and Major Stephen Long (1819-20). The chief impression brought back from both the Pike and Long expeditions was that the West was unfit for human habitation. This gave birth to the "Great American Desert" myth that persisted for decades.



(Top) This kind of triangulation signal was used by surveyors of the American West for many decades. This is an R. H. Chapman photo, circa 1895, from the history collection of the U.S. Geological Survey.

(Center) An 1811 artist's sketch of the fur trading post at Astoria, Washington, on the mouth of the Columbia River. Lewis and Clark were here several years before the post was established. National Archives.



(Right) Color painting of a Mandan Indian chief, courtesy of Denver Public Library; and photograph by W. H. Jackson of the Nez Perce Chief Joseph.

(Above) A Mandan village.

Both Mandans and Nez Perce Indians received the Lewis and Clark expedition cordially. It was in a Mandan village that the party met Sacagawea and her husband, a French fur trader, both of whom helped lead the expedition safely through the northwest wilderness.

The Nez Perce Indians remained friendly with white travelers and settlers for many years after their first meeting with the Lewis and Clark group. However, in 1863 gold was discovered on lands assigned to the tribe by treaty, and prospectors began crowding into the Wallowa Valley. After several vain appeals to Federal authorities, Joseph and his band were forced into retreat, and, after a chase of many months and thousands of miles, were defeated. Joseph died in 1904.



By the mid-1840's settlers were pouring into Oregon and California, and, although few stopped short of these promised lands on the Pacific, the mountains and plateaus which intervened were no longer an unknown wilderness. Maps grew in number and in accuracy and were supplemented by the renderings of artists who came to paint the romantic, infinitely varied scenes of frontier life: the Indians, the buffalo, the mountains, desert, and plains, and the daily activities of the emigrants from the East.

There was, moreover, throughout this period an organized and continuing effort to learn as much about the trans-Mississippi country as possible. Most of the organized exploration efforts were conducted by the Army. (There was, as yet, no Department of the Interior.) Virtually every expedition was instructed to examine and report on plants, animals, geological formations and Indian life in the areas explored. The sum of these many separate efforts to inventory the resources of the West came to be known as the Great Western Reconnaissance, and it was closely watched and advised by the most eminent scientific bodies of the day. A vast amount of the information was collected, organized, and classified for future use, and cartography expanded from the limited, sketchy, and often inaccurate maps produced by earlier individual expeditions to portrayals of the entire region West of the Mississippi based on reference points determined by instrumental surveys.

By the 1840's the Army had set up a topographic corps — a pool of scientifically trained Army officers who were called upon to organize and lead expeditions. Beyond doubt the most prominent of all was John C. Fremont.

On his first independent expedition in 1842 Fremont went to the Wind River Mountains in western Wyoming to assess South Pass' possibilities as an emigrant route. Two annual Oregon migrations had already moved through South Pass but

Fremont's descriptions heralded it as the major way to both California and Oregon.

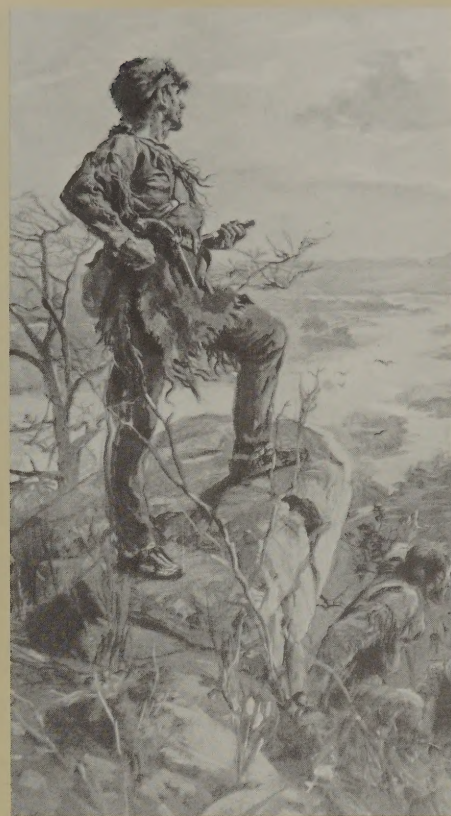
His second and possibly most fruitful expedition began in 1843. Fremont approached South Pass via the Arkansas, went on to the Great Salt Lake, then moved down the Columbia, swung southeastward into the Great Basin, entered California, and then returned east via the Spanish Trail and the central Rockies.

The Army was tapped in the 1850's for more expeditions. Some 30 were staged in the 1850's, the most notable being the five expeditions along five possible Pacific railroad routes.

Meanwhile, the active period of public land surveys had been completed in Ohio (which was the first), Alabama, Arkansas, Illinois, Indiana, and Missouri by the middle of the 1850's. Iowa public land surveys were three-quarters finished, as were those in Michigan and Mississippi. The surveys in Florida, Louisiana and Wisconsin were somewhere near the half-way mark. Those in Minnesota, California, Kansas, Nebraska, New Mexico, Oregon, Washington and Utah were only just beginning.

Topographers were closely followed by geologists in their efforts to improve the graphic presentation of the West's physical features. Geological maps of this region began to appear in the 1850's. By this time a serious effort was under way by geologists all over the country to interpret the forces that had raised the Rockies, formed the Great Basin, and cut the Grand Canyon of the Colorado; and to reconstruct from fossil and stratigraphic evidence their geologic past. On both theoretical and practical levels, geology had become a major consideration in the ongoing development of the West.

It may even be argued that, had not westward expansion progressed with such technical precision, ultimate settlement and development would have been far slower, and quite probably with less adverse impact on Indians.





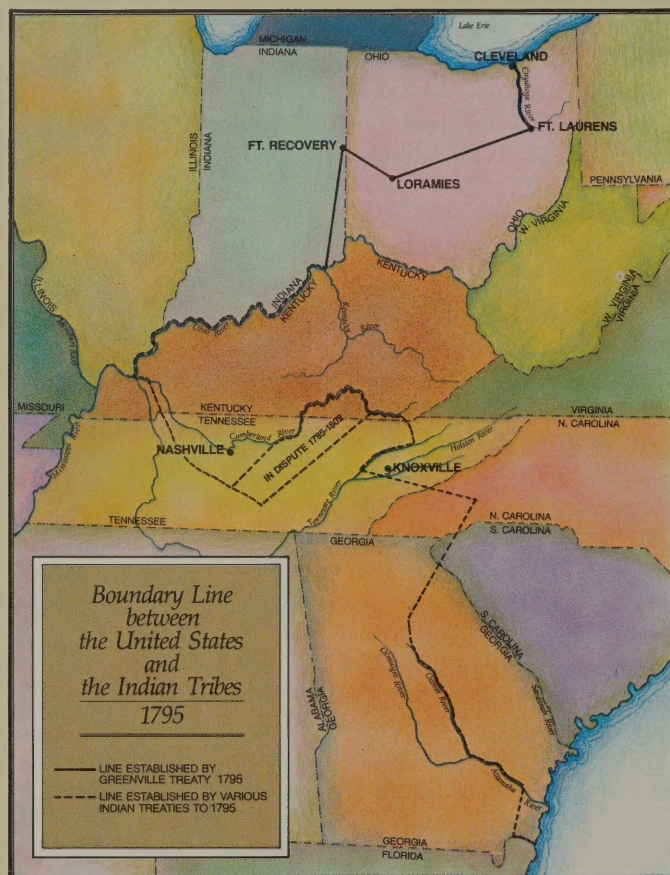
More about Indians and Land Policies

The Northwest Ordinance of 1787 provided "the utmost good faith shall always be observed toward the Indians; their land and property shall never be taken from them without their consent; and in their property, rights and liberty, they shall never be invaded or disturbed, unless in just and lawful ways authorized by Congress; but laws founded on justice and humanity shall from time to time be made, for preventing wrongs done to them, and for preserving peace and friendship with them."

It took the Constitution of the United States to put muscle into the good intentions toward Indians that Congress had attempted to enforce while the country was still functioning under the Articles of Confederation. The Constitution provided that Congress alone would have the power "to regulate Commerce with Foreign Nations, and among the several States, and with the Indian Tribes." Thus, the concept of Indian tribal sovereignty was carried forward from earlier British-American history.

For nearly a century after the adoption of the Constitution, the Indians were legally regarded as foreign nations residing within the limits of the United States, whose right of occupancy of their tribal lands could be legally adjusted only by treaty.

When the War Department was established, all functions relating to Indian Affairs were placed under the Secretary of War. In a statement issued December 15, 1789, the War Department acknowledged its responsibility for protecting the frontiers. For example, entrance into Indian land south of the Ohio River without a passport was declared punishable by fine or imprisonment. However, the War Department was never very successful in protecting Indian land from encroachment.



Land Swaps by Treaty

During the latter part of the 18th Century, the Federal Government entered into a number of treaties with Indian tribes, most far-reaching of which was the Treaty of Greenville in 1795. The Treaty resulted from defeat of the Indians by General "Mad Anthony" Wayne at Fallen Timbers, Ohio.

Twelve tribes in all came to Greenville to debate their claims west of the Alleghenies — Wyandot, Delaware, Shawnee, Ottawa, Chippewa, Potawatomi, Miami, Eel River, Wea, Kickapoo, Plantashaw, and Kaskaskia. The agreement reached July 30, 1795, put an end to 40 years of warfare in the Ohio Valley, where an estimated 5,000 whites and an untold number of Indians had been killed or wounded. Greenville marked the beginning of fifteen years of peace between Indians and whites of the Old Northwest. It was not until after this treaty that the settlement of the Northwest Territory began in earnest.

William Henry Harrison — later to become President — was named Commissioner of Indian Treaties in 1803. About 100 million acres were ceded to the United States during his tenure as Commissioner. By 1810, nearly all of the present State of Ohio had been signed over to the Americans. Harrison's technique was to trade with the Indians for lands to the West, sometimes by bribing or browbeating tribal spokesmen, sometimes by vying for support by pitting one tribe against another.

Forced Removal

In the early 1800's however, the Sioux and Chippewa, ranging eastward with British encouragement, had set up a barrier in Wisconsin against further westward movement by Indians from the east. At the same time, an Indian leader came forward to oppose Harrison's tactics. Tecumseh, a Shawnee chief, aided by his brother, The Prophet, set out to build an Indian confederation with members pledged not to sell land without the consent of all.



Tecumseh. Courtesy Smithsonian Institution.

Harrison tried to forestall their influence by challenging The Prophet to show his prophetic powers by causing the sun to stand still, the moon to alter its course, the rivers to cease to flow. The British picked up this message as it circulated among the tribes. Eager to cause trouble between their former subjects and the Indians, they told The Prophet of a forthcoming solar eclipse, which he then predicted. His prestige remained intact.

Tecumseh continued to move among the tribes with his doctrine of a united Indian front against further land cessions. During one of Tecumseh's absences, Harrison moved troops to Tippecanoe Creek near Prophetstown to challenge the new Indian confederation. After a bloody battle, militarily inconclusive, the Indians fled, and Harrison then burned the settlement.



(Above) An 1889 Kurz & Allison chromolith reconstructing the Battle of Tippecanoe. From Library of Congress.

(Opposite Page Center) The "cliffdweller" Indians of the Southwest were affected first by the Spanish and then by Americans as the western migrations accelerated after 1850.

(Opposite Page Bottom) From the Library of Congress, this otherwise unidentified scene entitled "Trading on the Plains — A Seductive Offer — the Indian in Doubt".

No. 187

CERTIFICATE issued in pursuance of the provisions of the Acts of 3d March, 1837, 23d August, 1842, and 3d March, 1845, for the **UNITED STATES** under the 11th article of the **TREATY OF SEPTEMBER, 1830, made at WASHINGTON** **RAHBEY CERRY,** with the **CHOCTAW INDIANS.**

Whereas, the **COMMISSIONERS** appointed under the Act approved on the 3d day of March, 1837, entitled "An Act for the appointment of Commissioners to adjust the claims to reservations of land under the fourteenth article of the treaty of eighteen hundred and thirty with the Choctaw Indians," have determined that *See to y.* a **CHOCTAW HEAD OF A FAMILY,** is entitled, under the fourteenth article of the treaty aforesaid, to one Section of six hundred and forty acres of Land in his or her own right: and, whereas, the said determination has been concurred in by the President of the United States: and, whereas, the United States have disposed of the Section of Land to which the said *See to y.* is entitled as aforesaid, so that it is now impossible to give the said Indian the quantity according to said article,

Now, Therefore, pursuant to the acts of Congress approved on the 23d August, 1842, and 3d March, 1845, this certificate is given by the **SECRETARY OF WAR,** by direction of the President of the United States, that the said *See to y.* is entitled, if living, and if not, the heirs and legal representatives of the said claimant are entitled to **THREE HUNDRED AND TWENTY ACRES,** (one-half of the above quantity) of Land, to be taken out of any of the public lands in the States of Mississippi, Louisiana, Alabama and Arkansas, subject to entry at private sale. Any assignment of this Certificate must be attested by two credible witnesses.

GIVEN under the Seal of the War Department, this *first* day of *October* 184*6*.

W. L. Marcy.

Secretary of War.

W. M. Will

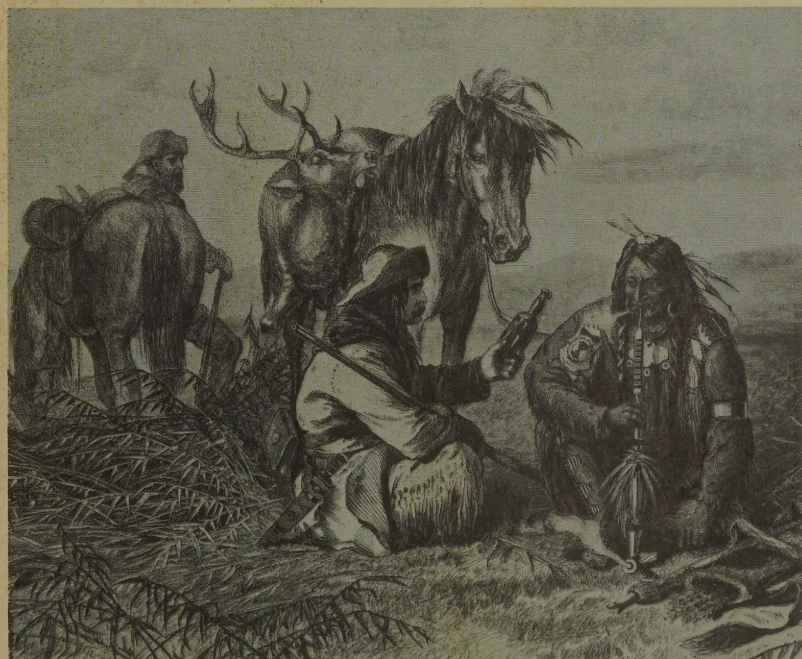
Commissioner of Indian Affairs.

The Battle of Tippecanoe had given Harrison evidence that the British were siding with the Indians with the intent of disrupting the peaceful expansion of the American frontier. The news set the frontier aflame with the urge for a war to conquer Canada and put Britain in her place. The affair at Tippecanoe augured the beginning of the War of 1812, which was to be declared officially within a few months.

Tecumseh, with 1500 warriors, joined the British in Canada and became a major force in the British campaign in the west. The surrender of Detroit was ordered out of public fear of his forces. When Commodore O. H. Perry captured the British fleet on Lake Erie the British and Indian forces began a retreat. Pursuing American forces, led by William Henry Harrison, attacked the British at the River Thames, and Tecumseh was killed in battle.

Indian removal efforts had also increased in the southeast at about the same time that Harrison was operating in Ohio. In fact, the Seminoles of Florida became a significant factor in the acquisition of Florida from Spain. After the War of 1812, General Andrew Jackson was sent southward to put an end to the long-time Seminole slave raid forays into Georgia. Because the Spanish government had been unable to prevent the Indians from crossing the international boundary, the violation of U. S. sovereignty was used as justification for Jackson to move into Florida, where he proceeded to seize the Spanish capital of Pensacola. King Ferdinand decided it would be prudent to sell Florida to the United States.

The next step was a removal treaty with the Seminoles in 1823, but it was not until 1841, following the death of the Indian resistance leader, Osceola, that most of the Seminoles headed west along with many Negroes whom the Seminoles had aided in escaping.



For a fifteen-year span between 1825 and 1840, Federal agents were busy negotiating removal treaties. The Osage and Kansas ceded Kansas and northern Oklahoma, reserving only small reservations. The Shawnees of Ohio were then removed to Kansas, and other tribes of the old northwest — Delawares, Kickapoos, Fox, and numerous others — were also persuaded to trade for lands to the west.

Other tribes in the Southeast proved as resistant to the removal policy as the Seminoles were. The Creeks decreed death for any chief signing a removal treaty and made good by shooting down one chief who defied the edict.

The Cherokee removal — among the most publicized at the time — took place only after that tribe had taken every conceivable measure within the law to retain their lands in Georgia and to the north. On the Fourth of July, 1827, they gathered at New Echota, Georgia, to draft a constitution for a Cherokee republic, which they promptly ratified. The State of Georgia saw this as a threat to its sovereignty and, in retaliation, enacted repressive legislation and demanded that the Federal Government remove the Cherokees. Upon appeal, the Supreme Court ruled that Georgia's Cherokee acts were "repugnant to the Constitution, laws and treaties of the United States . . . interfered forcibly with relations established between the United States and the Cherokee Nation."

Andrew Jackson, by this time President, is rumored to have commented, "John Marshall has made his decision, now let him enforce it." Whether Jackson actually made this remark is not conclusively known. However, he sent the Army to force the Cherokee removal. The Cherokees were rounded up and escorted, through winter snows, to the area now called Oklahoma. The journey is remembered as the "Trail of Tears."

Indian Territory Formed

Speedy consolidation, settlement and development of the most productive areas acquired from France and Spain were Jackson's overriding concerns as President. The Nation was still poor and struggling, having only a few years previously emerged from the War of 1812. Jackson's removal policy was based on the continuing premise that the tribes were sovereign entities, to be dealt with by treaty negotiation, with the sovereign interests of the United States uppermost, even to the point of bloodshed, if necessary.

By "an act to regulate trade and intercourse with Indian tribes and to preserve peace on the frontiers" Congress established the Indian Country in 1834, comprising all the territory at that time owned by the United States which lay west of the Arkansas Territory and the Missouri River. The five tribes of the Southeast — Cherokees, Chickasaws, Creeks, Choctaws and Seminoles — had expectations, later to be shattered, of an

Indian State, Oklahoma, to be part of the Union.

Even before the term "Manifest Destiny" had been coined, the drive was on to circumscribe Indian tribes in order to consolidate a Nation that would reach ultimately from coast to coast. The public lands, with the funds that could be derived from their sale, settlement and development, were the major asset of the Republic, and the political reality was that national growth demand forceful measures.

Expansionism and battle with Indian tribes continued for many more years as the frontier line moved steadily westward. Several decades were to pass before public attitudes changed and caused a turnabout in Federal Indian policies. Government efforts to make amends continued even up to the dawn of our national Bicentennial.

"Trail of Tears", from the original oil painting by Robert Lindneux at Woolaroc Museum, Bartlesville, Oklahoma.



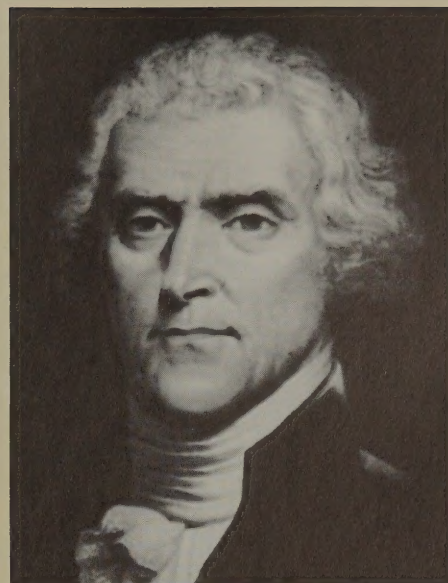
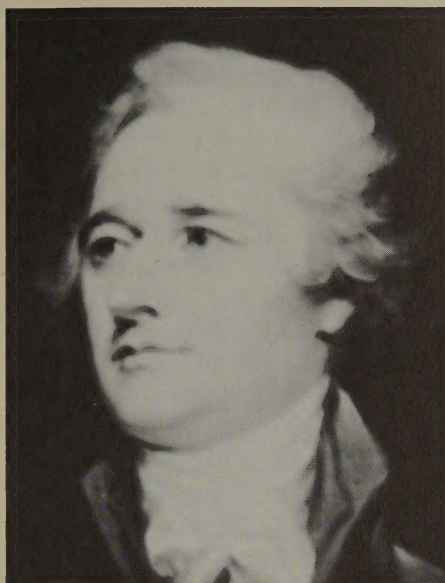
Doing A Land-Office Business

Alexander Hamilton, the most ardent advocate among the Founding Fathers of strong centralized government, was also the exponent of the principle that the public lands should be sold in large blocks to rebuild the depleted condition of the Federal Treasury. When President Washington appointed Hamilton as the first Secretary of the Treasury, he asked Hamilton to draw up a plan for "the adequate support of the public credit." Along with the Secretary's subsequent proposal for establishing a national bank and paying off the public debt at par was his thesis that revenues from the sale of public lands would finance the liquidation of the public debt.

Even though he and Thomas Jefferson disagreed heartily on the merits of a strong centralized government and upon the means for selling public lands, Hamilton won support from Jefferson on his financing plan in exchange for rallying Congressional support to locate the Nation's Capital in the south.

After Jefferson became President in 1801 and negotiated the purchase of Louisiana Territory from Napoleon, the sale of public lands soon became institutionalized.

Alexander Hamilton, Thomas Jefferson, and an old Land Office scene.



With increasing development and settlement, it became apparent to Congress that it would be necessary to set up an agency for administering and disposing of the public lands. Responsibilities for the public domain were put in the hands of the Commissioner of the General Land Office under the Treasury Department in 1812.

The term "doing a land-office business" soon came into the American jargon, signifying the swift and lucrative transactions that took place over the next several years between the United States Government and buyers of public land.

Public land sales began to boom after 1820, when the price was set at \$1.25 per acre and tracts as small as 80 acres could be purchased.

A recent student of early land offices, Malcolm Rohrbough, has vividly reconstructed the technique and spirit of a public land auction. The following passage is from his 1968 book, *The Land Office Business*:

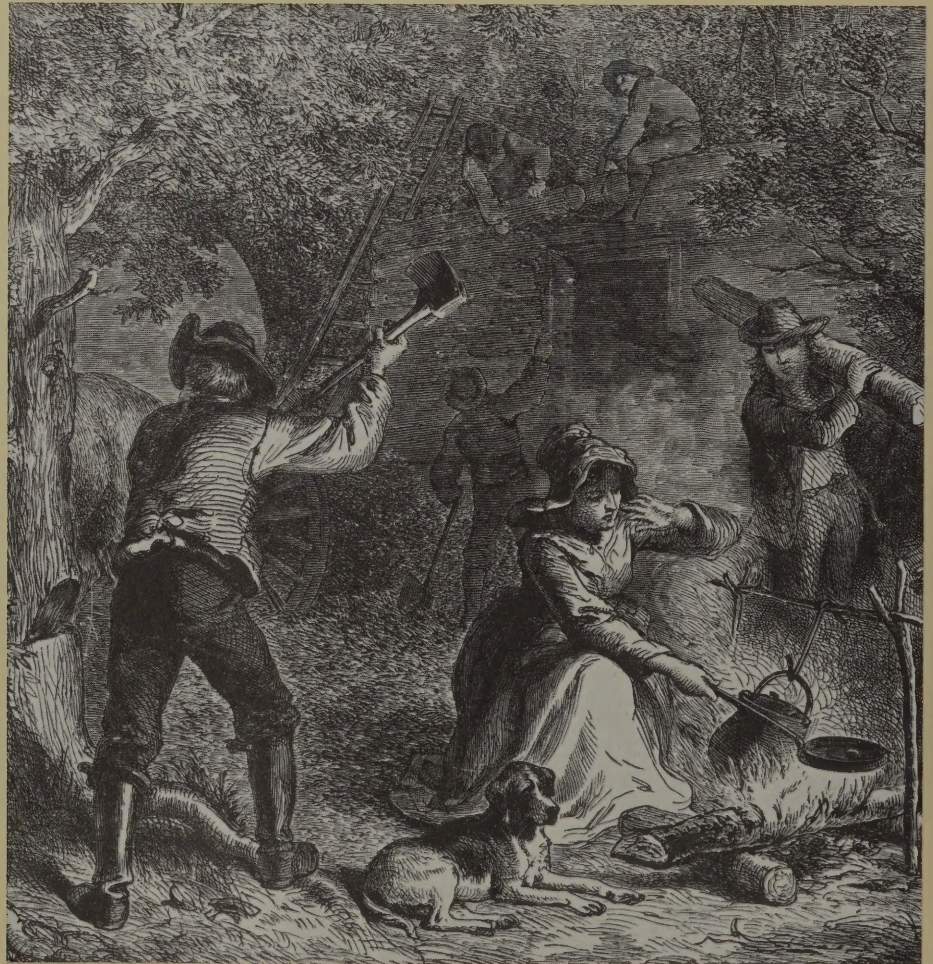
"When the day of the sale came, the registrar emerged from his office flanked by clerks and a crier. They moved through the crowd to a raised platform, where the crier took his position, declared the sale open, and then cried off the first section of the first township. A pause followed while he waited the requisite thirty seconds for a bid. The sale had begun. For the next three weeks the scene would be enacted over and over, without losing any of its drama. The process by which the public lands were brought to market through survey and public sale were known to every citizen in the western country; and a public land sale ranked with birth, marriage, and death among the most significant events in the life of any frontiersman. Here, in a few seconds, decisions were made that had a lifelong impact on the men who were present. It was invariably a moving and sobering experience, drawing forth loud outbursts which were followed by long

silences. Occasionally violence erupted, but, generally, unofficial rules of competition had been agreed upon well before the formal opening of the sale. There were scenes of great cupidity and great generosity, with the latter all too rare."

(As late as the 1940's this same kind of excitement prevailed in public auctions. An official conducting a sale of public lands in the California desert recalls having to call out the Los Angeles fire department to contain the crowd of bidders.)

In the early decades of the General Land Office, the President of the United States personally signed the patent conveying title to the land. This patent then became the first document in a chain of title for all subsequent transactions under State real property law.

The Boelter Homestead in Minnesota.
Courtesy Library of Congress.



CHARLESTOWN:
PRINTED BY WILLIAM W. WHEELDON.
R. P. & C. WILLIAMS—BOSTON.
1831



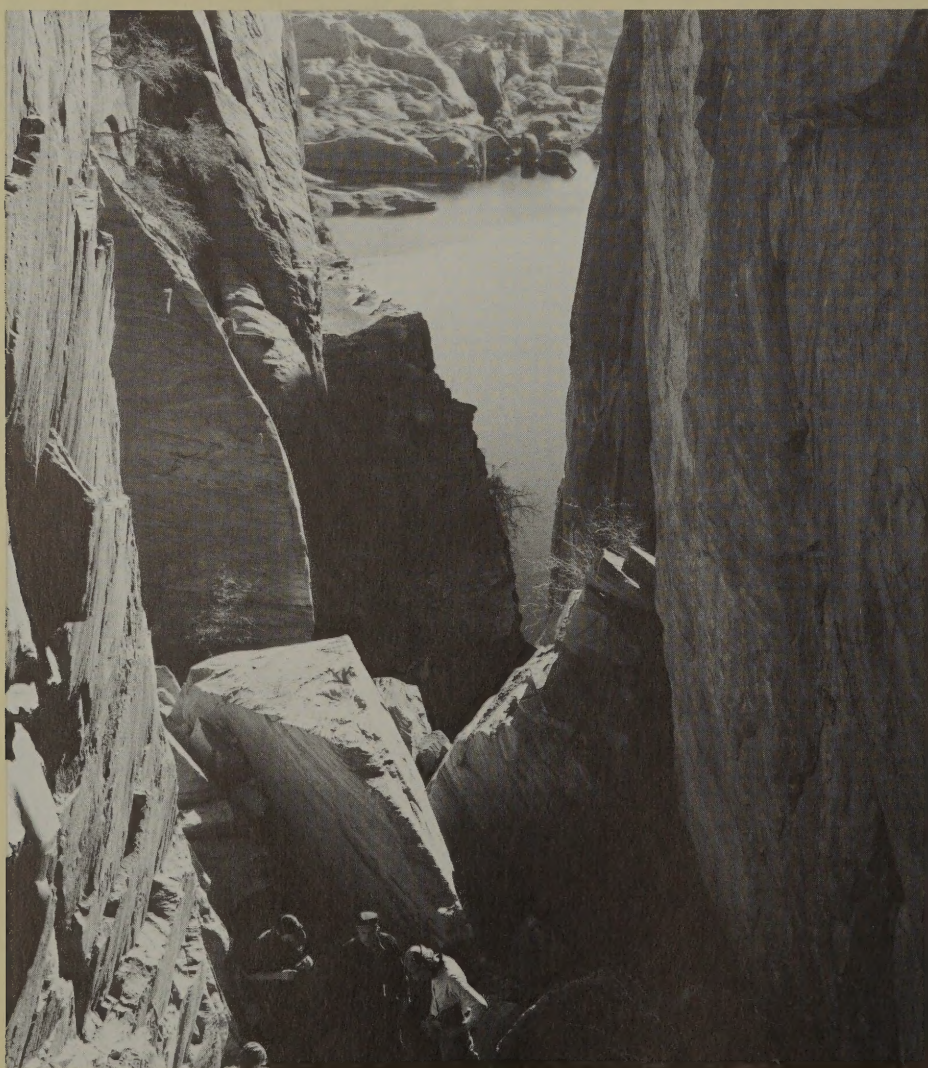


In the 19th Century, the position of Commissioner of the General Land Office was one of the most sought after of Presidential appointments. One of Abraham Lincoln's political disappointments was in being passed over for the job in 1849.

Like the fingers of a hand reaching outward, settlement spread in all directions. Alabama, Mississippi and parts of Louisiana and Arkansas were settled largely through land sales, following Eli Whitney's invention of the cotton gin in 1793. In England, Hargreaves' spinning jenny, Arkwright's automatic carder, and Cartwright's power loom were transforming garment making from a household pursuit to factory mass production. The demand for cotton seemed almost insatiable, and after 1791 the American cotton plantation economy boomed. Out of the boom came an increase in slavery, a price for a growing economy.

More land sales were stimulated when the Erie Canal opened in 1825, connecting the Hudson River in New York with the Great Lakes and providing a water route all the way to Wisconsin. It lured thousands of New Englanders and New Yorkers westward.

One observer of the time noted: "They established a new Connecticut in the Ohio territory and that not merely in name but in fact. The inhabitants of a township in the Eastern States, who may be disposed to explore the western wilds, generally understand one another, concert their measures beforehand, and if they do not depart in a piece, yet they eventually come together at a preconcerted rendezvous. Schoolfellows and companions in infancy reunite, and it often happens that the grownup man meets there and marries the playmate of his childhood."



The land hunger of the American people was not restrained by national boundaries. In the 1820's, hundreds, then thousands, gave up their American nationality and placed themselves under Mexican sovereignty in order to get land in Texas for growing cotton. They ultimately revolted against Mexico's attempts at strong centralization of government, which led to an independent Republic of Texas, then admission to the Union (1845). Culmination was in the Mexican War (1846-48). The United States then acquired a huge slice of new public domain, all the way to the California coast, as a result of the post-war Mexican Cession and subsequent Gadsden Purchase.

There were also migrations northward beyond the national boundaries. Early in the 1840's "Oregon fever" struck in the Mississippi Valley. Thousands of families sold good farms "for a song without a tune" to join the trek to Oregon.

(Opposite Page Above) Public land auctions, until very recent years, were very much a part of the western American scene. This July 1915 photograph was taken as the first sale of public lands opened in Alaska.

(Opposite Page Below) View looking down the "Hole in the Rock" on the shore of Lake Powell. This is the famous canyon crossing where the Mormon pioneers lowered their wagons over the cliff and crossed the rugged Colorado River with them.

The urge to get new farm land at the far edge of the continent drew people, mostly Missourians, into California. There were enough Americans in California to secure virtual control of California from the Mexican authorities when the Mexican war broke out.

An escape outside the national boundaries was the motive for another mass migration of the 1840's—the Mormon Trek to Utah. The Mormons originated in western New York and migrated first to Ohio and Missouri, and then to Illinois in the general mass migrations westward. Their first leader, Joseph Smith, was killed in an outburst of violent religious intolerance, and the Mormons decided their future would be more secure outside the United States. Under their second leader, Brigham Young, they trekked to a haven within Mexican territory at the foot of the Wasatch Mountains. They were among the first to settle in the arid stretches of the Far West and the first to divert streams and dig ditches for irrigation to meet the demands of a totally new environment. Although the Mormons hoped to establish an independent state — "Deseret" — the Mexican cession in 1848 brought the Mormon settlements back under the American flag.

Chronicling the Drama of Movement

Some of those who witnessed these great migrations were aware that they were historic events, and these mass movements of the American people were well chronicled.

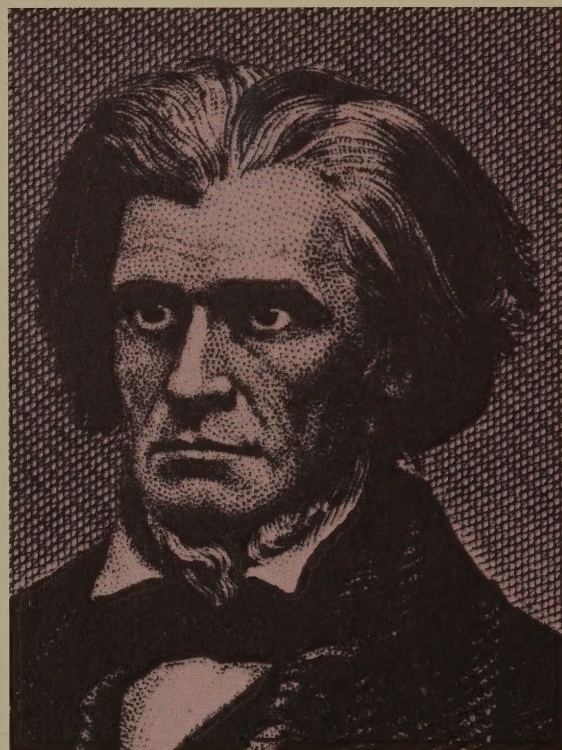
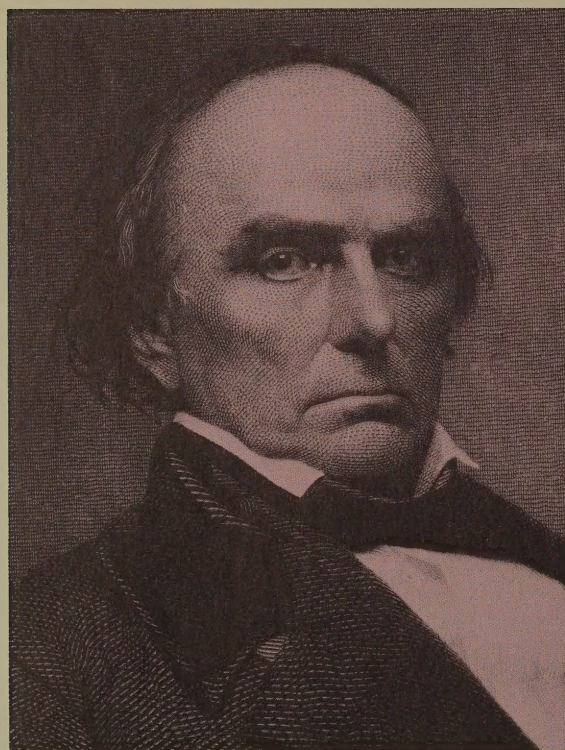
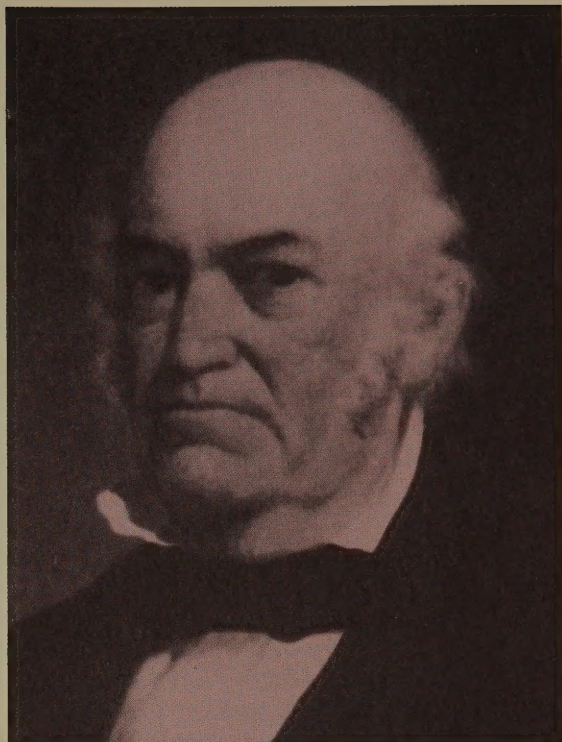
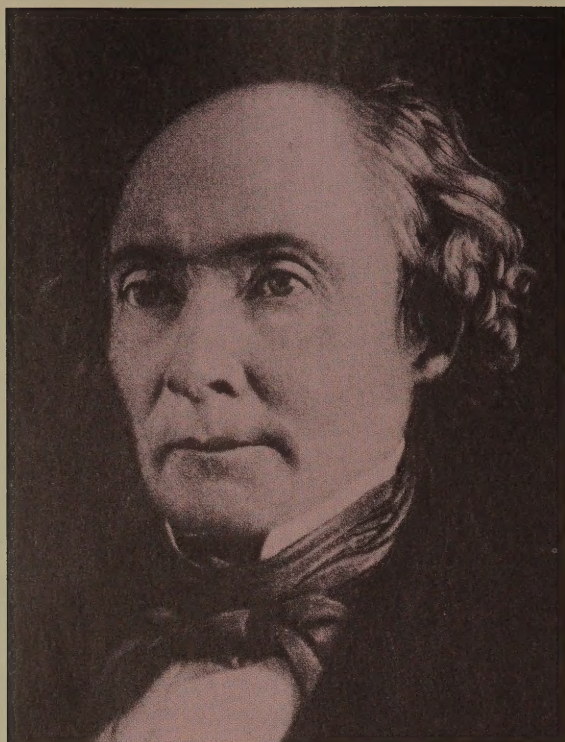
In 1818 a traveler in Missouri reported a train of "nine wagons harnessed with from four to six horses . . . The whole appearance of the train, the cattle with their hundred bells; the Negroes with delight in their countenance, for their labors are suspended and their imaginations excited; the wagons, often carrying two or three tons, so loaded that the mistress and children are strolling carelessly along . . . the whole group occupies three quarters of a mile."

A Virginia editor commented in 1829 upon the flow of migrants passing his community moving toward Indiana, Illinois, and Michigan: "They were principally from the lower part of Virginia and South Carolina. They jog on, careless of the varying climate, and apparently without regret for friends and the country they leave behind, seeking forests to fell and a new country to settle."

In 1845 a family group of 62 members arrived in Madison, Wisconsin, and a local paper chronicled the event: "The patriarch of the family will be 88 years old in July. He is one of the venerable relics of the Revolution . . . He moved off in his old chair, surrounded like Abraham, with his scores of descendants, anxious to die, as he has lived, amongst them."

As this indicates, age was not a bar to movement. One traveler encountered a couple in their sixties moving down the Ohio River in a flatboat and asked them why they were on the move: "Why, Sir, our boys are all married, and gone off, and bustling about for themselves; and our neighbors, a good many of 'em's gone out back, and so the old woman and me felt sort o' lonesome, and thought we'd go too, and try our luck."

In the westward movement land bounties continued to be used as rewards for military service, just as they had been used to organize the army of George Washington. In 1850 a military bounty was extended to each commissioned officer in the Mexican War, as well as to War of 1812 veterans. The acreage was granted by terms of service: 160 acres for nine months, 40 acres for one month. Eventually anyone serving for as little as two weeks since 1790 was given a warrant to claim public lands.



Interior—A Cabinet Post To Fulfill a Concept

Curiously, despite its growing preoccupation with acquiring and consolidating a public domain, the United States Government for its first 60 years lacked an Executive Branch department to oversee the domestic matters that derived from the existence of so much territory.

During the Constitutional Convention in 1787, Gouverneur Morris offered a cabinet-type plan—a Council of State—which included a Secretary of Domestic Affairs. However, the plan was not adopted. Again, shortly before the War of 1812, a committee of the House of Representatives, organized to study operations of the Patent Office, suggested creation of a Home Department. A few years later, the Senate instructed the Department heads to submit a joint plan for administrative reform—to attack a serious fiscal problem—the lack of a plan for the annual settlement of public accounts and control of expenditures. The “Report of Four Secretaries” issued in 1816, called for a Home Department as well as other reforms, and President James Madison endorsed the proposals.

It was not until the great territorial expansion into the Southwest and Pacific Northwest, however, (resulting particularly from the Oregon acquisition of 1846 and the Mexican Cession of 1848) that Congress went all the way with legislation for a Department of the Interior in 1849.

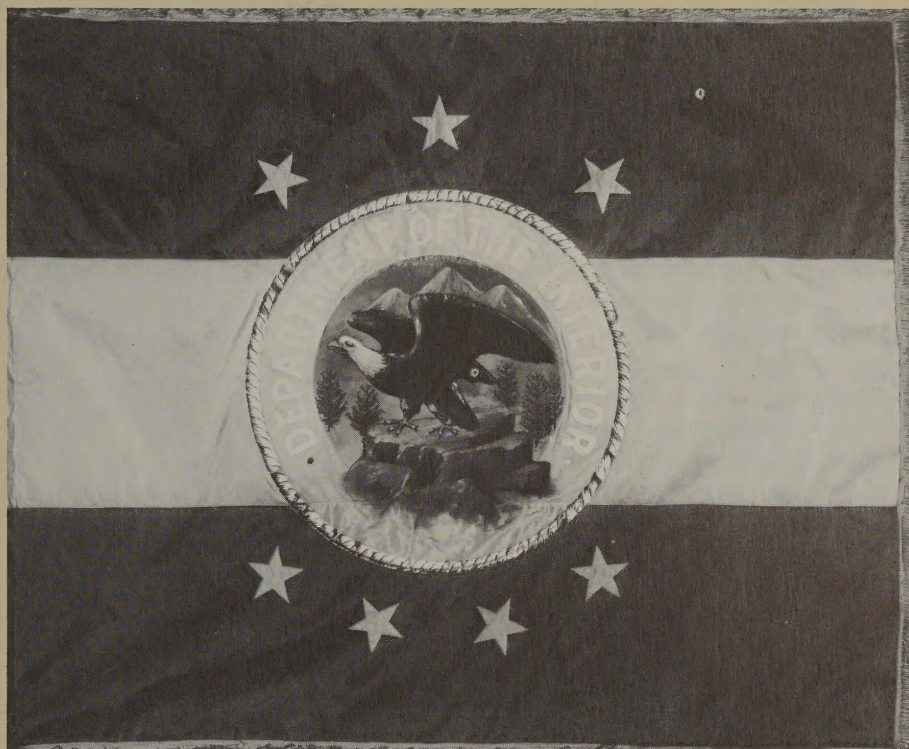
The General Land Office and matters pertaining to the disposition of public lands until that time had been responsibilities assigned to the Department of the Treasury. In the early days, this arrangement was logical, inasmuch as the sale of public lands was the primary source of filling the Treasury coffers. In the 1840’s an astute Secretary of the Treasury, Robert J. Walker, realized that his Department could not cope with the volume

of public land business that would be deriving from transcontinental settlement. Even in the 1840’s he found that half his official time was being devoted to land management responsibilities.

Such matters as war pensions and Indian affairs were also closely related to custodianship of the land, and Walker regarded these matters, which necessitated his close dealing with the War Department, as wholly extraneous to his role as Secretary of the Treasury.

(Opposite Page, Clockwise) Robert J. Walker, Secretary of the Treasury who espoused creation of a Department of the Interior; Thomas Ewing, first Secretary of the Interior; John C. Calhoun and Daniel Webster, the first an opponent, the latter a proponent of establishing the new Cabinet-level agency.

(This Page) The buffalo later supplanted the eagle on the Interior Department seal.



Some Pro's and Con's

Walker recommended establishment of a new department to oversee these and other domestic affairs of the country. His recommendation found an ardent sponsor in Samuel F. Vinton, Chairman of the House Ways and Means Committee. Vinton also served on the House Public Lands Committee, was interested in promoting Indian welfare, and wished to increase scientific investigation for which the Patent Office would be the focus.

The House Committee on Agriculture backed Vinton in sponsoring Walker's proposal, deploring the neglect of agricultural and mechanical sciences, interstate trade and general education. The Agriculture Committee called for a new department to give leadership in a war on "ignorance, destitution and vice."

Vinton brought the Interior Department bill to the floor early in 1849. The early debate focused on the name of the proposed agency, one member objecting to the term "Interior" as being too French-sounding. There was some concern that the term might be construed to imply, in the European sense, an internal police agency.

The serious opposition came from Senator John C. Calhoun, whose political views leaned strongly toward "strict construction" of the Constitution. Speaking against the Interior bill, he said: "We are step by step concentrating . . . this power until finally we will take the last and final step and conduct all business under the name of the 'Department of the Interior'."

Daniel Webster, on the other hand, had long espoused the move for creation of a new department to manage affairs of the "interior," as the territories were often called. He argued that the presence of a single agency to deal with territorial matters would be of considerable benefit to new States.

President Polk signed the Interior legislation but wrote in his diary that his approval was reluctant. He confessed the fear that the jurisdiction of the Federal Government would be so strengthened that it would upset the fragile balance that existed between the southern and northern States.

There was, however, little foundation to the fears relating to the Interior Department. The legislation did not bring any new Federal functions into being. Rather, it consolidated under a single Secretary several existing responsibilities that had been under scattered administrations.

An Agency of Many Parts

From its inception, the Department of the Interior became a repository of responsibilities that seemed to fit nowhere else as well. The first Secretary of the Interior had supervision over the General Land Office, transferred from the Treasury Department; the Bureau of Indian Affairs, transferred from the War Department; the Pension Office, which was made up of functions formerly performed by both the War and Navy Departments; and the Patent Office, which was inherited from the Department of State. Agriculture as a matter of concern to the Federal Government received recognition in the new Department of the Interior, albeit from an unusual perspective: An agriculture division was placed within the Patent Office.

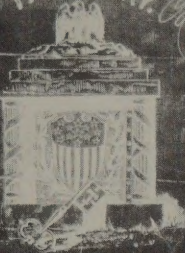
In addition, the Secretary of the Interior became supervisor of the National Census, overseer of lead mines, director of the District of Columbia penitentiary and its water works, overseer of the Capitol grounds and Potomac bridges, and Chief of U. S. Marshals.

Even matters pertaining to Negroes in the District of Columbia became a concern of the Secretary of the Interior. Prior to president Lincoln's 1863 Emancipation Proclamation, Congress had made provision for some Negroes — those who were freemen living in the District of Columbia — to be aided in settling in Liberia or Haiti, if they chose. In 1862 an Act was passed for emancipation of slaves in the District, and aid to resettle outside the United States was also provided for them. The responsibility for administering this assistance devolved upon the Secretary of the Interior. Later, when Howard University was founded in 1867, it was placed under direction of the Department of the Interior, as was Freedmen's Hospital in the District.

When the U. S. Office of Education was created in 1869, it was placed in the Department of the Interior. Labor conditions, particularly as they surfaced as major issues in the mining industry, led to creation of a U. S. Bureau of Labor in 1884, also for a short time under the Interior Department. Because of the early location in the Interior Department of these activities that later commanded full-fledged Cabinet status, Interior is sometimes called "the Mother of Departments."

TREASURY

TREASURY DEPARTMENT.



To the Treasurer of the United States, *George*

PAY to *Edward de Stoeck, Comy*

Extraordinary & Minister Plenipotentiary of
his Majesty the Emperor of Russia

or order, out of the appropriation named in the margin,

Seven millions, two hundred thousand
dollars, being in consideration of certain
territory ceded by the Emperor of Russia
to the United States, as described in
 treaty of 30th March 1867

WARRANT.

No. *937*

APPROPRIATION.

In carrying into effect the
 treaty with Russia, of
 March 30th 1867, for
 Alaska, purchased

Agreeably to a Certificate of the Comptroller of the Treasury,
No. *45615* dated *29th July 1868*, recorded by
the Register. For so doing, this shall be your WARRANT.

Given under my hand and the seal of the
Treasury, this *first*
day of *August*, in the
year one thousand eight hundred and
sixty-eight and of Independence
the *93rd*

Wm

W. L. G.

In G. W. M.

Rich. C. Smith
Secretary of the Treasury.

\$7,200,000.

COUNTERSIGNED.

RECORDED August 15 1868

Al

M. J. Jeffers

Register.

R. W. Dwyer
Comptroller

4/8

August 1

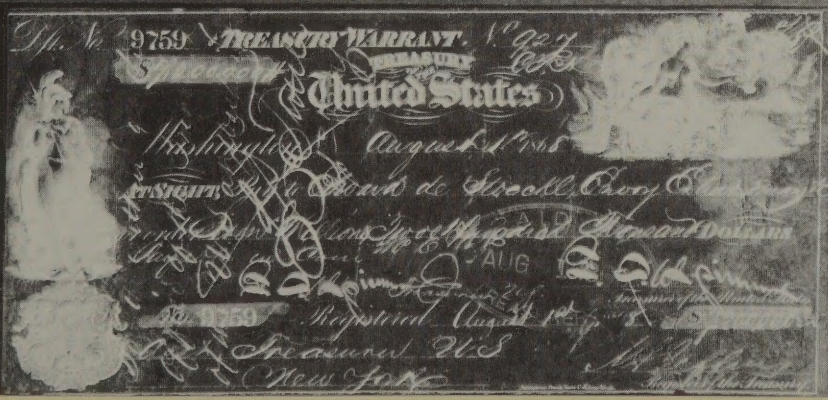
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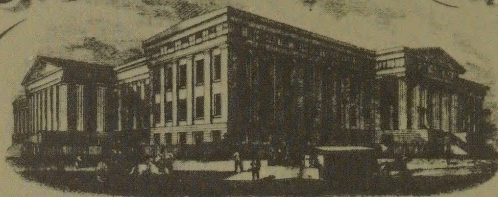
in my possession
R. W. Dwyer



Alaska Transfer papers.

1274,405

The United States of America



TO ALL TO WHOM THESE PRESENTS SHALL COME:

Whereas Alexander Graham Bell, of Salem, Massachusetts

has presented to the Commissioner of Patents
a petition praying for the grant of **LETTERS PATENT** for an alleged new and useful

Improvement in Telegraphy

a description of which invention is contained in the Specification of which a copy
is hereunto annexed and made a part hereof, and has complied with the various
requirements of Law in such cases made and provided; and

Whereas upon due examination made the said Claimant is adjudged
to be justly entitled to a Patent under the Law;

Now therefore these **LETTERS PATENT** are to grant unto the said
Alexander Graham Bell, his heirs or assigns
for the term of seventeen years from the Seventh day of
March one thousand eight hundred and seventy six
the exclusive right to make, use and vend the said invention throughout
the United States and the Territories thereof.

In testimony whereof I have hereunto set my
hand and caused the seal of the Patent Office
to be affixed at the City of Washington,
this seventh day of March
in the year of our Lord one thousand eight
hundred and seventy six and of
the Independence of the United States
of America the one hundredth.

B. Chandler
Secretary of the Interior.

D. C. Bell
Commissioner of Patents

Although responsibility for the sale of public lands through the General Land Office was assigned to Interior in 1849, overall management of territorial affairs remained with the State Department until 1873 when this function was transferred. With this added responsibility for the public estate, Interior's role as active overseer and developer of public domain resources began to take form. Eventually the Department nurtured into statehood thirteen States carved from territories under her administration: Alaska (1959); Arizona (1912); Colorado (1876); Hawaii (1959); Idaho (1890); Montana (1889); New Mexico (1912); North and South Dakota (1889); Oklahoma (1907); Utah (1896); Washington (1889); and Wyoming (1890).

The Department of the Interior also nurtured the political growth of Puerto Rico into Commonwealth status; the Philippines into inde-

pendence; and has encouraged increasing local self-government in the Virgin Islands, American Samoa and Guam. All of these islands were acquired after the United States had passed her Centennial mark. In addition, the Department by 1975 was helping to prepare the Trust Territory of the Pacific Islands (administered under a UN agreement) for new political status.

This photograph by J.K. Hillers shows the skyline of the Nation's Capital and nearby marshes before the city grew to its present-day outlines. Some of the marshlands were filled and made into recreation areas administered by the Department of the Interior.





Glitter and Grab

The formation of the Department of the Interior had hardly been completed when something happened in California that thrust the General Land Office into the limelight as never before.

It happened on land that one of many immigrants had settled. Johann August Sutter, a Swiss who had fled his country leaving debts behind, was convinced that his fortune would be found in America. He was an enterprising fellow and did not leave everything to chance. He journeyed first across the Oregon trail to Vancouver, where he sized up the potential of the West Coast. Then he sailed to Honolulu, hired workmen to join him in San Francisco, and proceeded back across the Pacific to California with a plan in mind of building a fine estate. Before long he had acquired a spread with cattle, horses, a tannery, a winery and a gristmill.

Sutter's mill was where gold was discovered in 1848. The glitter and the promise of it, as word spread across the land, accelerated disposition of public lands. Developers and speculators, particularly in the mining industry, were quick to take advantage of the easy availability of a piece of the public domain.

"Gold fever" infected not only speculators but a cross section of the American people. As the names they left across the Mother Lode testify, they came from all quarters of the Union. They were farmers, laborers, lawyers, ministers, sailors, soldiers, the law-abiding, outlaws. By the close of 1849 something like 50,000 had arrived in California.



Newspapers printed all kinds of information concerning California and the routes to it. Merchants advertised articles they stated were necessary for the health, safety and comfort of the gold seekers. Others advertised prospecting equipment. "It beats all the dreams of romance and all the marvels of the golden wand of Midas," one newspaper reported in summary of the news from California. "The excitement seems to grow by what it feeds on, and there is no prospect of abatement," a Wisconsin editor wrote. The excitement spread to Europe, Australia and China.

Those who came by land followed the trail of the farm-seekers of the early 1840's up the Platte River to cross the Continental Divide at South Pass, down the passes of the Wasatch, across the deserts and plains of Nevada and through passes of the Sierra Nevadas to the gold strikes in the Mother Lode. Those who wanted to escape the dangers and the foot weariness of the long trek went by sea. Some went the whole 16,000-mile voyage down the Atlantic, around Cape Horn and up the long Pacific Coast. Those whose patience would not abide this journey but who were willing to risk fever in the jungles went by sea to Panama, crossed the Isthmus and resumed the sea voyage on the Pacific side.

No other gold rush was ever as big or exciting as the California rush, but it was only a beginning. Oregon, Nevada, Idaho, Montana, and Colorado had mining strikes in the 1850's and 1860's, the prime causes for the first settlement of those areas.

What had been a steady undulation of migration became roaring waves of movement into the new West, the lure of mineral wealth drawing thousands of settlers into the previously empty spaces between the prairie States and the Pacific.



(Opposite Page, Bottom) "Gold Mining in California" — Currier & Ives.

(This Page, Top) Burro train carrying supplies to mining camps. Courtesy Denver State Historical Society.

(Below) Sutter's Mill. From Gleason's *Pictorial Drawing Room Companion*, 1852. Courtesy Library of Congress.





Mining cycles developed a distinct pattern: a strike followed by a rush to stake claims. Many rushes never went beyond this point. The early reports were often unfounded or did not produce on their promise. At the successful strikes, there was a period of furious staking of claims, and much exchanging and sales of claims to consolidate ownership until producing properties with long term potential were assembled. After this, excitement cooled and the steady production began.

With more and more people in the West, many settlers found it expedient to farm, raise food and exchange their agricultural products for the wealth which others dug from the ground. In places, water works — including wooden flumes snaking down the hills from mountain streams that had been developed for mining and then abandoned when the richer ores gave out — were converted for irrigation water supply.

The economic activity set the stage for the rapid rise of mining towns. As the money flowed in, some of it was poured into cultural activity. Edwin Booth, the great Shakespearian actor of the mid-19th Century, and Jenny Lind, the Swedish Nightingale, toured the California mining camps in the 1850's. At Deadwood City, South Dakota, in the 1870's, Gilbert and Sullivan's *Mikado* played 100 nights. An elegant opera house gracing the mining town came to be the status symbol announcing that the mining town had indeed arrived.

The gold rush reinforced the theme of Manifest Destiny which had become the rationale for America's relentless push to the Pacific. It precipitated another generation of fierce conflict with Indian tribes, some native to the Far West and others who had moved to the West during earlier decades.

The Army had become a necessary and extensive presence to protect the newly acquired public estates. The chain of fort-settlements created north and south, east and west, from the Mississippi to the Pacific, also served as base points for regiments that devoted much of their energy toward countering Indian resistance.

Some of the results are chronicled in official reports of the land surveyors. For example, in 1857, there was an Indian war in what is now Washington State. The surveyor general's report said: "The paralysis caused by the Indian war, the scarcity of men and general impoverishment of the inhabitants, including the few land surveyors of the country, have made it impossible to find deputies willing to contract . . ."

Ten years later, an old-time surveyor, Nicholas Buck, applied for a contract to survey the area from Red Willow and Frontier Counties in Nebraska westward to the Colorado line. The application was refused because of the hostility of Indians in that area, but Buck tried again the next year and this time was granted permission on the condition that he would have a large party. The last ever heard of Buck or his party was in a letter dated July 21, 1869, postmarked from Fort Kearney.

The discovery of gold near Pikes Peak, Colorado, in 1857 had brought 100,000 miners into the Cheyenne and Arapaho country, leading to a series of confrontations with these nomadic tribes. Mining advances into western Montana led to similarly fierce confrontations with the northern plains tribes. The Sioux Chief, Red Cloud, warned that the building of the fortified Bozeman trail from Fort Laramie northwestward meant war. Massacre of a military relief party in 1866 near Fort Kearney resulted in a Congressional investigation of Indian affairs and creation of a peace commission to resolve relations with the numerous western tribes.

Several western tribes were removed to areas not in the direct path of white movement. The Sioux were concentrated in the Black Hills of the Dakotas. Other tribes were relocated in areas of western Oklahoma, in areas that earlier had been reserved for the Five Civilized Tribes of the Southeast. Caught between both sides in the Civil War many Cherokees, Creeks, Choctaws and Seminoles had sympathized with the Southern Confederacy, and this was one excuse used to strip them of some of their lands to make room for relocation of Plains tribes.

These settlements with western tribes provided an uneasy peace, and the military presence continued for several decades more. Even so, by the time Abraham Lincoln became President, a public reaction had begun to set in against the prevailing military Indian policies. In 1862, President Lincoln's Secretary of the Interior, Caleb Smith, recommended a "radical change in the mode of treatment of Indians," seeing the Federal Government as guardian rather than rival. Consequently, the Interior Department's efforts were sometimes in conflict with military policy and it sometimes became the uneasy and unhappy buffer between the Indians and the U. S. Army.

(Opposite Page, Top Left) A Klondike family. Photo from Denver Public Library.

(Opposite Page, Bottom) By 1870, when W. H. Jackson took this photograph from a high hill overlooking Helena, Montana, settlements of this size were already scattered throughout the West, the offspring of railroads and the discovery of gold.



Such scenes as these Pawnee sod lodges in Nebraska and thatched tepees of the Bannocks in Idaho were not unfamiliar to the early travelers into gold country. The photographs are by W. H. Jackson.

The prospector with his traveling companions was caught by Dalglish' camera on Gray's Peak, Colorado. Courtesy State Historical Society of Colorado.



"Free Soil and Free Land" — Impacts of the Lincoln Era

Abraham Lincoln campaigned on a double-barreled slogan. It called for containment of slavery within those States where it already existed, thus guaranteeing that any new States coming out of the public domain would be "free soil," and it called for a homesteading law providing "free land" to anyone who wanted to settle in the public domain. The territories must be kept free, he contended, because "new free states" would provide "places for poor people to go and better their condition."

Laboring class immigrants and runaway or freed slaves were among those who were the poorest of the poor in those times, with little, if any, opportunity to buy public lands even at the bargain prices that generally prevailed.

Lincolnian Land Policies

The year 1862 was a landmark year in which four major laws were passed that helped settle and develop more lands. Of prime significance was the Homestead Act. It opened the door of western opportunity to thousands of Americans who could not afford to purchase public lands.

The Homestead Act went into effect on the same day President Lincoln issued his Emancipation Proclamation — January 1, 1863. It was a milestone in an Administration usually remembered primarily for the war that finally erupted over the long-standing issue of States' Rights as opposed to strong centralization of the government. In fact, had it not been for the secession of several Southern States, the Homestead Act might never have come into being. Several times in earlier years similar legislation had been defeated, generally because of Southern fear that the homesteaders who would take advantage of it would be northerners

LAND SCRIP No. 1 FOR "ONE QUARTER SECTION."

Colleges for Agriculture and Mechanic Arts.

ACT OF CONGRESS, JULY 2, 1862.

For State of Texas

Whereas, in pursuance of the Act of Congress approved July 2, 1862 entitled "An Act donating Public Lands to the several States and Territories which may provide Colleges for the benefit of Agriculture and the Mechanic Arts,"

The State of Texas has accepted the Grant provided by the said act, and under the same, has consequently a legal claim to One hundred and eighty thousand acres not locatable by the State itself, but liable to transfer and may be located by the ASSIGNEES of said STATE, according to assignment, ATTESTED BY TWO WITNESSES, on the form on the back of this instrument: the locations by Assignees in satisfaction of the provisions mentioned to be made in virtue of the regular Series of Scrip, a part of which is this

Land Scrip No. 1 for "One Quarter Section."

Therefore be it known, That this scrip, when duly assigned and attested by two witnesses under such authority of the said State as the act of the Legislature thereof may designate may be surrendered at any Land Office of the United States in satisfaction of a location of One Quarter of a Section or for any quantity in one legal subdivision less than One Quarter Section where such location is taken in full for One Quarter Section—the location to be restricted to vacant public lands subject to entry at private sale at \$1.25 per acre, MINERAL LANDS EXCLUDED; and whilst the aggregate location of all the claims under the said act may be taken in any of the Territories without limitation as to the quantity located in any one of them yet in virtue of express limitation in the Statute, not more than One Million Acres of the total aggregate Supplies under said act can be located within the limits of any one of the States.

Given under my hand and seal of the Department of the Interior, on the Sixteenth day of February, A.D. 1871, and of the Independence of the United States the Twenty fifth

H. C. Cole Secretary of the Interior

Recorded, Vol. 188 Page 100. William Drummond Commissioner of the General Land Office



opposed to slavery. (If an imbalance of slave States and free States occurred, the rights of individual States to perpetuate slavery would be in jeopardy because they would be outvoted in the Senate.)

Under the 1862 legislation, adult citizens of the United States as well as aliens seeking citizenship status were eligible to apply for homesteads. It provided that, having "resided upon or cultivated" the acreage for the following five years, and if by then a citizen, the settler could receive a patent. Another important feature of the law provided that this homestead could not be seized by a creditor to satisfy any debts previ-

ously contracted. It was the imprint in law of a concept of land that had emerged gradually with the growth of the Republic: that each head of a family was entitled to a home or farm. Eventually, some 270 million acres of public domain lands were turned into a million and a half farms.

Thousands who wanted a farm, or merely dreamed of having one, wrote to the Washington or local land offices seeking information. The following excerpts from a prospective homesteader's letter illustrates that much was often expected from the Commissioner of the General Land Office:

"Dear Sir:

In view of my intention to file on a homestead claim I would appreciate very kindly your consideration of the following questions concerning land open to homesteaders.

Is there any wheat land open to homesteaders?

Is any of this land irrigated?

What is the nature of the soil?

Can the land be easily broken by plow?

What is on the land now?

Is there any grazing land open to homesteaders now?

What are the railroad facilities?

What is the rainfall?

What will location and filing fee including showing of land cost me?

Can you send me a table showing number of acres of grazing land open to homesteaders and number of acres of wheat growing land?

Can employment be secured near?

What is the range of temperature?

What is the mean annual temperature?

Is the climate healthful?

Why has the land been idle?

Is there any hunting and fishing?

Is there any organization for co-operative work?

I would appreciate very much any consideration you will give this, and shall anxiously await a reply."

(Opposite Page, Center) The Sprey family, entertainers who homesteaded in Custer County, Nebraska. Photo by S. D. Butcher, circa 1887. From Denver Public Library.

Butcher also did the study of the other Nebraskan homesteading couple. American Gothic?



asc

HOMESTEAD.

Land Office at *Bromville Neb*
January 20th 1868.

<p>CERTIFICATE, } No. 1 }</p>	<p>APPLICATION, } No. 1 }</p>
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It is hereby certified, That pursuant to the provisions of the act of Congress, approved May 20, 1862, entitled "An act to secure homesteads to actual settlers on the public domain,"

Daniel Sprman has made payment in full for *Section 26* of *Range 5 E* containing *160* acres.

Now, therefore, be it known, That on presentation of this Certificate to the COMMISSIONER OF THE GENERAL LAND OFFICE, the said *Daniel Sprman* shall be entitled to a Patent for the Tract of Land above described.

Henry M. Atkinson. Registered.

The original Homestead Act did not fully succeed in its primary intent to relieve the burden on cities of too many laboring class poor. Most of the easily tillable land had already passed out of the public domain into private ownership through the system of public land sales. The remaining tracts were far to the west, and most of the poor of the cities not only could not afford transportation to such locations, nor equipment to set up homesteading, but they also lacked training in agricultural skills. However, a new wave of immigrant farmers from Europe arrived to take their chances on the prairies, lured by railroad advertising to promote western development. Many wheat farms and virtually the entire sugar beet industry started with these immigrants.

A gift of public lands was also made to the State of California in 1864 — a spectacular block of the public domain which later was turned back to the Federal government as part of Yosemite National Park.

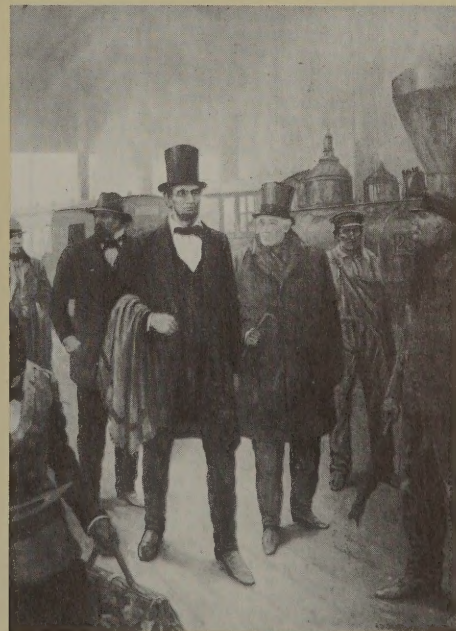
Promoting Education and Commerce

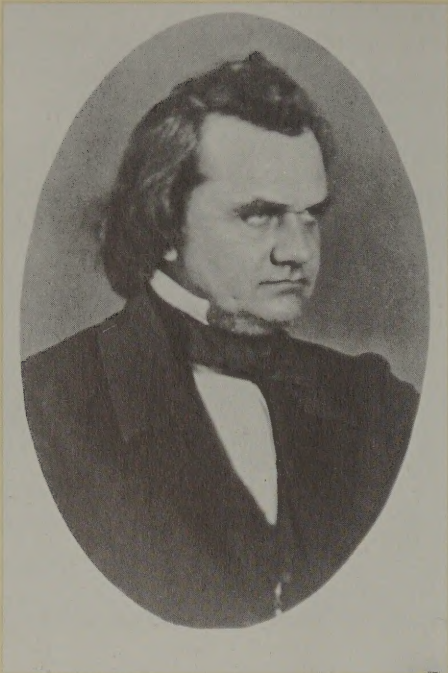
Lincoln had by this time developed a firm notion of what the government's relationship should be with the common man. "The legitimate object of government," he said, "is to do for a community of people whatever they need to have done, but cannot do at all, or cannot do so well for themselves, in their separate and individual capacities."

The concept of the right to education was broadened during the Lincoln Administration in a piece of legislation that has had a lasting impact upon the course of American social and economic history. This was the Morrill Act of 1862. It provided grants of land to the States for "colleges" where the subjects "related to agriculture and the mechanic arts" would be taught. Much of the scientific research and development in agriculture and natural sciences and in civil engineering began under such auspices.



Agricultural and industrial growth were prime concerns of President Lincoln, as evinced by two additional major pieces of legislation he signed into law in the signal year 1862. Agricultural affairs were elevated to higher status by legislation creating the Department of Agriculture. Still another link in the chain of legislation designed to reinforce the Union by hastening development of the western territories was the Pacific Railroad Act which set in motion the building of the first trans-continental rail network.





(This Page, Above) Stephen A. Douglas, steam behind the railroad land grants.



(This Page, Right) Shooting buffalo from trainside was sometimes a sport, sometimes a necessity to prevent stampede.

(Opposite Page, Top) Pittsburgh iron furnace, photographed by Hillers. This was big business after mining fever took hold and the wealth of hard-rock minerals was discovered. (However, even as early as the 17th Century, some Indians were mining copper ore).



Railroading, Mining, and the Public Lands

The growth of railroading was the instrumental factor in the quick conversion of the wild west into populated areas. Railroads hastened the consolidation of the Union into 48 contiguous States and were also instrumental in turning the remote wilderness of Alaska into a region with sufficient population to qualify for admission to Statehood.

Early Transportation Corridor Grants

Railroads emerged as a form of competition to water transportation. New York State's successful completion of the Erie Canal, joining the Hudson River with the Great Lakes in 1825, conferred a leadership in economic affairs upon that State. A canal building boom swept the country in the 1830's, and the Federal Government allocated six million acres of the public domain for it, beginning in 1827.

The precedent for transportation land grants was set in 1823 with a grant to the State of Ohio for a wagon road. Eventually 12 such grants were made — in Ohio, Indiana, Wisconsin, Michigan and Oregon — and a total of 3.2 million acres of public lands were patented to these States.

The Federal Government first became involved in railroad development with a land grant for a railroad from northern Illinois to the Gulf of Mexico in 1850. The developers hoped to compete with the Mississippi River as an artery of commerce.

The sponsorship of Stephen A. Douglas, the Little Giant of Illinois politics and a major force in the United States Senate, turned the tide in favor of the Federal grant. In fact, the railroad plan expanded under his guidance. Chicago became a terminal center — the beginning of Chicago's growth into the "big giant of the midwest."



The railroads each received even-numbered sections of surveyed public land in a band six miles wide on both sides of the right-of-way. The price for these sections was \$1.25 per acre. At the same time, the Government raised the price of the alternate sections to \$2.50 per acre. This pricing system became a standard feature of railroad grants.

Another standard feature of railroad land grants required the railroads to haul the goods and troops of the United States free of charge, a provision which continued until the onset of World War II, when it was repealed.

The Pacific coastal area was also eyed as a railroad terminus. A New England merchant in the China trade, Asa Whitney, petitioned Congress in 1845 to build a railroad from Lake Michigan to the mouth of the mighty Columbia River in the Oregon Territory, arguing that it would be a vital link between the United States and Asia. To finance it Whitney wanted a land grant sixty miles wide the length of the line. He planned to pay the construction workers with land grants. The concept was ahead of its time, however, as subsequent Congressional debates clearly indicated.

The Civil War broke the impasse over the hitherto mind-boggling Whitney proposal. The Pacific Railroad came to be viewed as a project to bolster national unification.

The first Pacific Railroad Act called for several companies to cooperate. The Central Pacific Railroad Company had been organized to build east from Sacramento. The Union Pacific Railroad then was authorized to build from a point on the 100th meridian to the western boundary of Nevada. As it worked out, Omaha on the Missouri River became the eastern terminus but a connecting link eastward across Iowa to Chicago made Chicago the real eastern terminus.

The Federal Government's support took two forms, the loan of Federal bonds and a gift of public land. The land grant was ten sections per mile in alternate sections.

Full scale construction efforts did not begin until after a second Pacific Railroad Act in 1864 increased the attractiveness to investors. The Federal Government's first mortgage on the railroad securing the loan of the Federal bonds was reduced to a second mortgage and the land grant was doubled to twenty sections per mile, or 12,800 acres per mile. The Central Pacific was authorized to extend its line, first into Nevada and finally into Utah.

After the 1864 act, construction began in earnest. The Central Pacific had the severest construction and logistics problems. Its railroad equipment and construction material had to come all the way around Cape Horn. It drew the bulk of the labor force from China. The Sierra Nevadas might have been an insurmountable barrier had not an enterprising engineer founded the grade across the Donner Summit — which construction crews had to blast out of cliff walls in some places.

The Union Pacific, building west from Omaha, had less formidable but still intricate logistics problems. Its construction material had to come up the Missouri River. It organized its construction crews in semi-military manner. This was relatively easy to do, for many of the men were veterans of the Civil War. Thousands more were Irish immigrants. The chief engineer was a Civil War general who used his knowledge of supplying vast numbers of men on the march to organize a steady flow of material to the key place — the end of track moving relentlessly forward one mile a day, then three miles a day, until, in the closing months, the crews were being driven to build eight miles per day of track.

(Opposite Page, Top) Laying of the Golden Spike, May 10, 1869.

(Opposite Page, Center) The Santa Fe Railroad bridge, as photographed by J. K. Hillers. From the U.S. Geological Survey.



**MOTHERS LOOK OUT FOR YOUR CHILDREN!
ARTISANS, MECHANICS, CITIZENS!**

When you leave your family in health, must you be hurried home to mourn a
DREADFUL CASUALTY!

PHILADELPHIANS your RIGHTS are being invaded! regardless of your interests, or the LIVES
OF YOUR LITTLE ONES THE CARDEN AND ARBOY, with the assistance of other companies
without a Charter and in VIOLATION OF LAW, as decreed by your Courts, are laying a
LOCOMOTIVE RAIL ROAD!

Through your most Beautiful Streets to the RUIN of your TRADE, annihilation of your RIGHTS, and regard
less of your PROSPERITY and COMFORT Will you permit this? or do you consent to be a
SUBURB OF NEW YORK!!

Rails are now being laid on BROAD STREET to connect the TRENTON RAIL ROAD with the WILMINGTON
and BALTIMORE ROAD under the pretenses of constructing a City Passenger Railway from the Navy
Yard to Fairmount! This is done under the auspices of the CARDEN AND ARBOY MONOPOLY!

**RALLY PEOPLE in the Majesty of your Strength and forbid THIS
OUTRAGE!**

**Kansas Pacific
HOMESTEADS**



**THE Best Place to Get a Farm
IS ON THE LINE OF THE
KANSAS PACIFIC R'Y**

The Lands are Rich. The Prices are very Low. The Time of Credit Long.
25 per Cent. Discount for Cash. 10 per Cent. for Improvements.

The Climate is very mild. The Soil is rich and fertile. The Water is pure and good. And the Wages are exceedingly
liberal. Emigrants are being made to settle and thereby settling.

NO PAYMENT OF PRINCIPAL IS REQUIRED FOR FOUR YEARS
After the First Installment has been Paid.

A FREE RIDE TO LAND BUYERS.

FIVE MILLION ACRES

THE KANSAS PACIFIC HOMESTEAD

For full particulars apply to the nearest Agent or to the
J. M. DEVEREUX, General Agent, Kansas City, Mo.
J. M. DEVEREUX, General Agent, Lawrence, Kan.



Promontory Point north of the Great Salt Lake was ultimately designated by Congress as the meeting point. On May 10, 1869, the last spike was driven — a golden spike formed from California's gold. Telegraph wires were rigged so that news of the sledge hammer blows went out over the telegraph lines to all the cities from Atlantic to Pacific, many of which were having their own last spike celebrations. When the last blow had been struck, the telegrapher tapped out a terse "Done."

At last steel rails bound a continental Nation and formed a link to the far shores of the Pacific.

The Federal Government contributed 19 million acres of public domain land to this railroad, in a great checkerboard from Nebraska to the Pacific.

Over much of the 19th Century, a western rail network grew, each railroad company starting with right-of-way and adjacent land grants from the Federal Government, as well as Federal loans. The Government itself operated the Alaska Railway, because private development was not profitable, yet a railroad was necessary to open up the land of "Seward's Folly," purchased from Russia in 1867.

The folklore of railroading survives in songs that told of the cruel life and hard living of the construction crews. Some of the more romantic songs stem from the Santa Fe, which, with link lines, was the means of passage between mid-America and the Southwest.

(This Page) A Missouri River boat hauling Montana coal, circa 1878; and hydraulic mining, about the same period, in Colorado. The top photograph is from the National Archives, the mining scene from the Colorado State Historical Society.

(Opposite Page) Miners at Suffolk Mine, San Miguel County, Colorado; and a youthful Pony Express rider. The mining scene comes from the Colorado State Historical Society, and the rider from the National Archives.

Railroads Make for More Mining

Without railroads the mining industry could not have flourished as it did in 19th-century America. They hauled ore to industrial centers, manufactured goods and machinery around the country and to seaports for shipment abroad, and they hauled buyers, sellers and laborers to and from their respective markets.

Formidable though the rugged western lands may have been for settlement, unquestionably they were rich in mineral wealth. First gold, then silver, copper, lead and coal were produced in growing abundance. There were no Federal regulations governing early mining on public lands, so that erosion, water pollution and deep pitting of the landscape came to be regarded as the inevitable — and relatively minor — price for the extraction of minerals that enabled private wealth to multiply and the gross national product to escalate.

Mining interest pressure for a means to establish legal mining rights on public lands led to the Mining Act of 1872. The law helped stamp out poaching on public lands by requiring that anyone wishing to mine on public lands must first mark out the boundaries of his claim and then file notice with the county clerk.

The 1872 mining law was based on the colonial mining law of Spain, as it had been adapted to custom established by the gold rushers in California. Under the Spanish code, the discoverer of a valuable mineral deposit applied to the government for a right to work the deposit by paying a royalty to the Crown. During the gold rush, however, the miners, operating under local codes they had developed for themselves, omitted the royalty requirement.



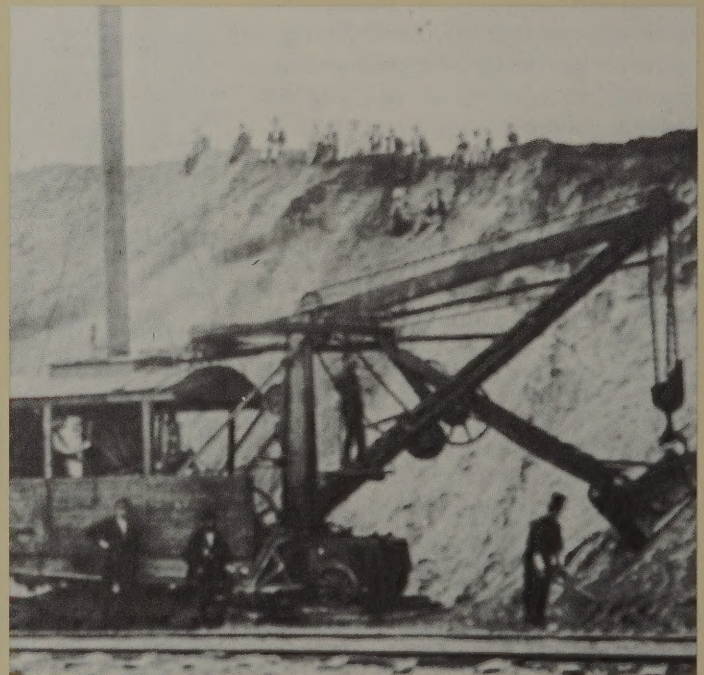
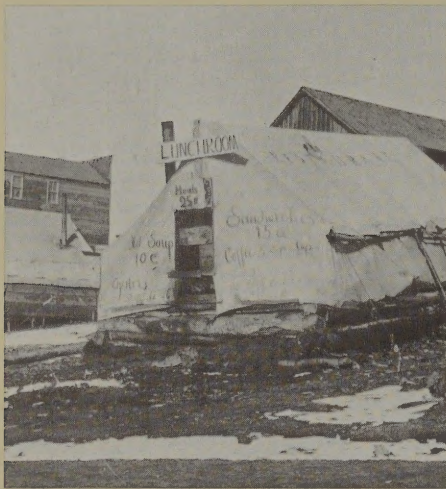
As the Mining Act was written in 1872, and today, more than a century later, still remains operative, a claimant may work public lands for minerals without seeking a patent for ownership, although the law was written in expectation that he would do so. Neither is he required to pay a royalty. In 1920 the Minerals Leasing Act withdrew certain critical minerals, such as oil, gas, and coal, and required rentals on acreage and royalty payments to the U. S. Government on their production. Another public disadvantage in the 1872 statute is in the fact that it imposes no requirement that mineral production be proved within a stipulated time period following the staking of a claim. Consequently many thousands of public land acres have become tied up in long-term non-producing claims, with no benefits of any kind deriving to the country. Nevertheless, there have been advantages in the 1872 mining law. For example, in the 1940's and 1950's, when uranium was urgently needed, it provided ample incentive to spur the enterprising prospectors to discover uranium-producing deposits on public lands.

Mining was big business and a job source for immigrants by the early 20th Century. Coal mining, in particular, became almost a subculture, a way of life. In the Appalachian coal belt, however, most of the land was privately owned, unlike the situation in the Rocky Mountain region.

The American landscape in both regions is a continuing reminder of early mining practices, pockmarked with ghostly remains of mining towns abandoned when a lode became exhausted and the camp moved on to the next good find.

It must be remembered, however, that mining, as well as timbering, grazing and all other forms of development, were looked upon as means to consolidate the Nation's economy. It took courage and fortitude to fight and tame the wild regions of the frontier, and those who undertook the challenges were regarded by the general public as heroic. Few Americans living during this country's first century foresaw the ultimate price that would be paid in the loss of forests, grasslands, wildlife and clean waterways as a result of the pace of development.

(Below) Lunchroom at Cripple Creek Mining Camp, Colorado; an abandoned mining town; and an early strip mine.



CHICAGO

Midway In America's Story





At America's Centennial, Chicago was supreme in America's heartland. The brawny, turbulent city on Lake Michigan epitomized 19th Century expansion and technological progress.

In 1876, when the attention of the Nation was drawn to the spectacular International Centennial Exposition in Philadelphia, the City of Chicago, boasting 335,000 inhabitants, was in the midst of a building boom, mightily working to erase the disastrous consequences of the great Chicago fire of October 1871. This central city was determined to rise from the ashes that devastated an area of nearly four square miles; it was literally resurrected. Indeed, when the new University of Chicago was established in 1891, its great seal carried a representation of the Phoenix, the mythical Egyptian symbol of death and renewal. The Great Fire, one of the major disasters in American history, was the terrible instrument that hastened the transformation of a city of wood into a city of marble and granite, sandstone and brick, iron and steel.

The pioneer trading settlement on the banks of the Chicago River was first platted in 1830 and became a village in 1833. Its development was rapid, and, just five years later, aided by harbor improvements and better overland transportation, it was incorporated as a growing city. By the time of America's Centennial, Chicago was a hub of commerce, well established as a livestock and meat packing center. Its stockyards, opened on Christmas Day 1865, proved a magnet for the sale and trade of animals and their processing into meat and hides and tallow — "everything but the squeal." The newly perfected ice box cars carried the butchers' products over a widening network of railroads of which Chicago was the heart and switching point.

All of this did not just happen. The Federal Government's liberal land policies had peopled the fertile acres of Chicago's hinterland and her leaders capitalized its very favorable geographic position. Chicagoans influenced the railroad land grant system so that western, northwestern, and southern systems radiated out from Chicago and the eastern systems naturally converged there.

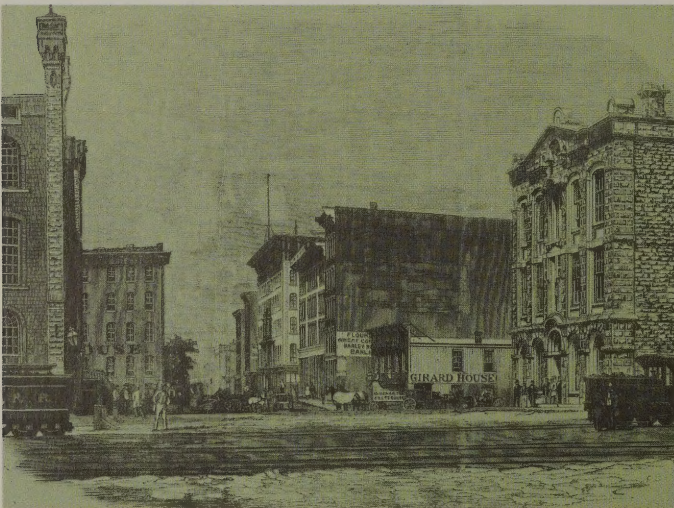
Industries flourished, such as the manufacture of farm machinery. To harvest the grain that fed the stock that nourished the people, Cyrus McCormick, an early tycoon, sold 10,000 reapers a year throughout America's farmlands.

(Below) The Chicago Stockyard.



(Below Top) Lithograph of the junction of the Chicago River, 1866.

(Below Bottom) A Chicago street, 1863.



Behind the booming businesses were the people, Europe's immigrants who had been brought in to build the railroads and operate the stockyards and steel mills. Later they were to be joined by blacks from the rural South. Due recognition of the contributions of these people did not come until the labor movement issues and a growing social consciousness focused attention upon them and their counterparts in other parts of urban America. It was the working people of Chicago who built it back up again after the Great Fire of 1871.

Amidst the fire's rubble, the city had quickly re-established the lots and boundaries of the business center, by a kind of torrens system. Chicago was from the beginning laid out on a rectangular grid, and one 19th century observer called it "the most right-angle city in the United States." As the streets spread outward, the grid was maintained, unless altered by terrain or design or both. A splendid example of variation from the rigidity of right angles is the suburb of Riverside, laid out in 1869 with curving streets, strict building rules, and extensive landscape controls. Frederick Law Olmsted, the noted planner, insisted on houses set back from the street and the amenities of parks and other open spaces, as well as overall attention to the environment as a whole. Riverside was the Nation's first planned model community, and it is now listed in the National Register of Historic Places.

(Below) The hustle and bustle in the Great Railway Station, Chicago, 1880.

And so Chicago grew from the ashes, and spread into the surrounding farmland in great leaps, along suburban railways and trolley lines. Palatial civic buildings, commercial properties, and private mansions burgeoned, as did houses, apartments, shops, factories, and warehouses. They produced a pattern copied in countless other American cities and towns as the population center of our developing Nation moved inexorably westward.

Although the city had lost irreplaceable objects in the Great Fire — the original draft of the Emancipation Proclamation was one — culture underwent a rebirth, as exemplified by the generous gift from England that provided the beginnings of the Chicago Public Library. Old institutions were revitalized, new institutions were formed, and the vigor of Chicago was everywhere manifest. One visitor, marvelling at the flourishing metropolis, called it “the lightning city.”

In the crucible of the Great Fire was forged an idea — an idea to show the nation and the world the wonders of the resurgence of Chicago. The idea was to result in the World's Columbian Exposition in 1893, a vast white city that dazzled the beholder with its inventions, achievements, architecture, and amusements. It was authorized by Congress in 1890 to commemorate the 400th anniversary of Christopher Columbus' discovery of America, and for seven months, centering on the summer of '93, throngs gathered daily to delight in its marvels. Just as Philadelphia's 1875 celebration of America's Centennial brought together on the Eastern seaboard the treasures of the time, so did the World's Fair at Chicago concentrate in the Midwest on a cornucopia for celebration.



(Below) The city that was built to house the World Columbian Exposition of 1893.

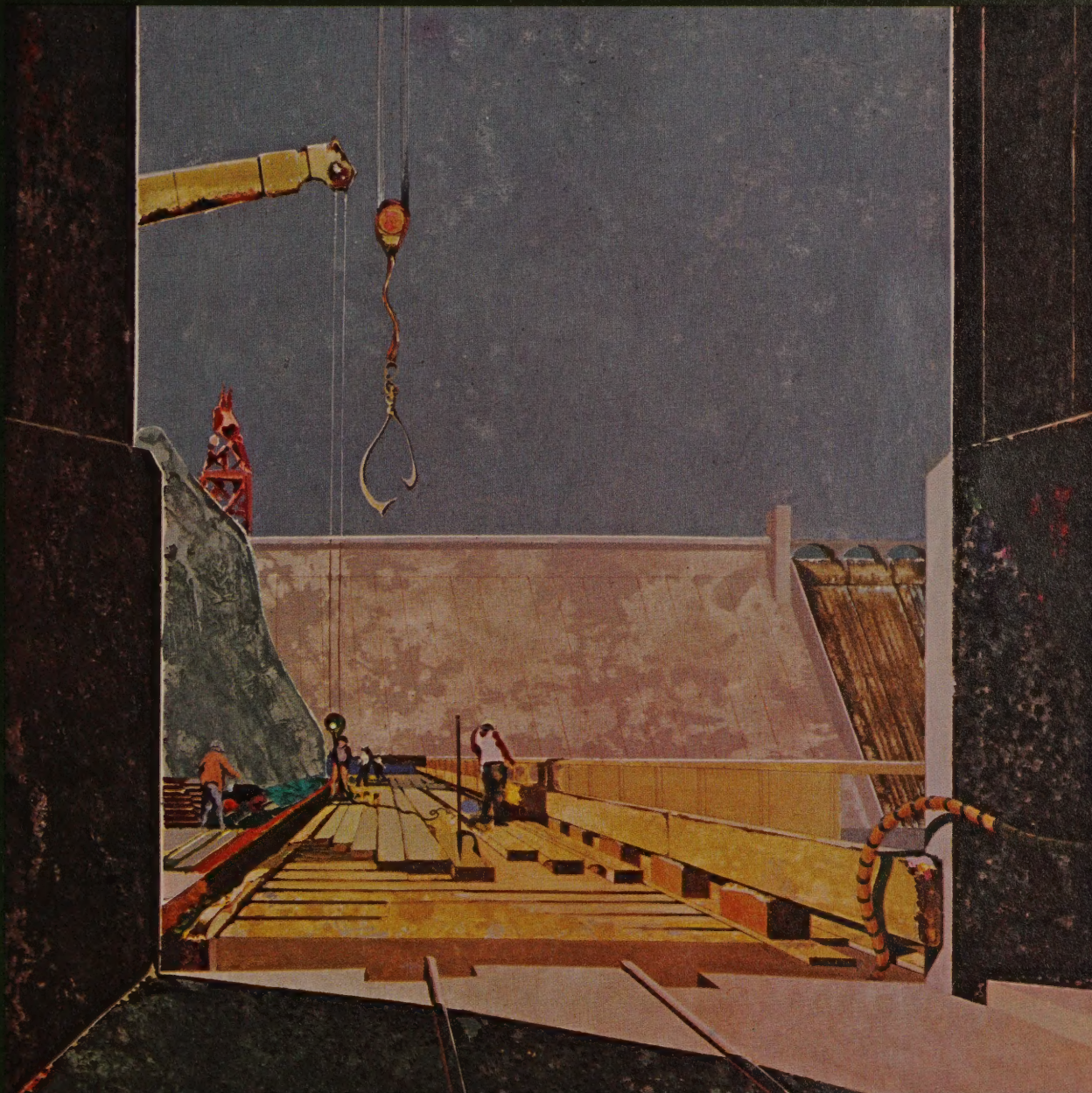


The Exposition, located on the shore of Lake Michigan, covered 150 acres with the best that America's architects and builders, engineers and artists, could present for the edification of the visitor. It was an artificial city, brilliantly implemented by such foresighted urban planners as Daniel Burnham and Frederick Law Olmsted, and embellished by the statuary of Augustus Saint Gaudens and Daniel Chester French. In all, some 21 million people made the pilgrimage; 541,312 of them came on the trains of the Illinois Central in just one day to celebrate Chicago Day. After studying animal husbandry at the Agriculture exhibits or the Federal Government displays in the United States Building, they could visit a Moroccan mosque, a Turkish village, or take tea at the Chinese Pagoda. These foreign exhibits, which added much flavor to the fair, were located on the midway Plaisance, 600 feet wide, that was later to become

the broad, tree-lined boulevard entrance to the University of Chicago.

The fair was festive, as it was planned to be, and gave surcease from the problems of the day, as it was planned to do, and its influence reverberated through the land and around the world. It was the reflection of a virile nation, and the promise of a new technological era in the history of man.

Century II, U.S.A.



The Philadelphia Inquirer

ESTABLISHED 1829.

PHILADELPHIA, THURSDAY, JULY 6, 1876.

PRICE TWO CENTS.

THIS MORNING'S INTELLIGENCE

At Home.
Stationary temperature, clear weather, with occasional showers, predicted for to-day.
The President has recognized Salvador de Mendonca as consul-general of Brazil in the United States.
Patrick Green, aged 43, proprietor of a saloon in Baltimore, committed suicide last night, by shooting.
Augustus Webster was killed by the premature discharge of a cannon at Kennebunk, Me., yesterday.
The Boston city authorities intend to rigidly enforce the license law, and all violators of it will be arrested.
Cyrus Daly was run over by an engine on the Pennsylvania railroad yesterday, near Columbia, Pa., and fatally injured.
John Walton, of Thirty-fourth street, New York, has been arrested in Paris for insanity. He was taken to London for trial under the extradition act.
Don Carlos and suite arrived at New Orleans yesterday from Mexico by the steamer "City of Mexico" and left for the North in the afternoon.

LATEST FOREIGN NEWS

THE EASTERN IMBROGLIO

Progress of the Campaign

TURCO-SERVIAN SKIRMISHING

Results of the Fighting Doubtful

BOTH SIDES CLAIM VICTORY

Significant Activity of Russia

HER NAVY ON A WAR FOOTING

Bulgaria Joins the Insurgents

GREAT INDIAN BATTLE

Sanguinary Fighting in the West

THE GROUND FILLED WITH BODIES

General Custer Among the Dead

OVER THREE HUNDRED KILLED

History of the Disaster

SALT LAKE, July 6.—The special correspondent of the Helena (Montana) "Herald" writes from Stillwater, Montana, July 5—Maggie Taylor, a scout for General Gibbon, got here last night direct from Little Horn river.

General Custer found the Indian camp

proclaimed Prince Milan Hospodar of Bosnia.
The "Daily Telegraph's" Berlin correspondent states that private advices from Bucharest indicate that within the last fortnight Russia has sent considerable reinforcements to Bessarabia.
Austrian troops are concentrating near Agram, in Croatia, and reinforcements have been ordered to Dalmatia.
GREAT BRITAIN.
The Centennial at Dublin.
Dublin, July 5.—A grand demonstration took place in the suburbs of this city last evening in honor of the American Centennial. Thirty thousand persons were assembled with American flags.
Mr. Parnell, member of Parliament from Meath, addressed the meeting. In the course of his remarks he referred to the Eastern question, when the crowd cheered loudly for

THE NATIONAL CAPITAL

THE APPROPRIATION DEADLOCK

Progress Toward Settlement

PASSAGE OF THE POSTAL BILL

A Blow for the Tildenites

JUDGE DAVIS DECLARES FOR HAYES

The Impeachment of Belknap

STANDELL IN THE TREASURY

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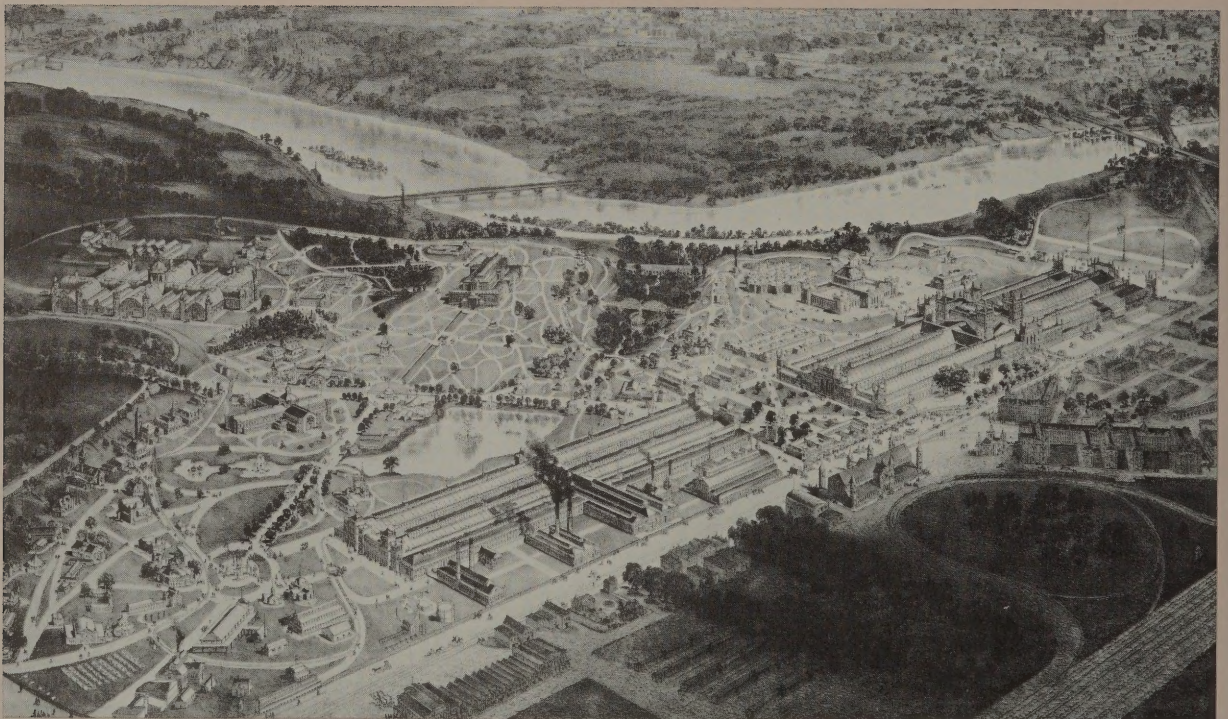
STANDELL IN THE TREASURY

Mr. Morrill to Take Office

Mr. Morrill to Take Office

(Right, Below, and Opposite Page) The battle of Little Big Horn, and two views of the Philadelphia Centennial Exposition.

(About the Cover) Concrete pouring to build a dam, from the Bureau of Reclamation's collection.



As the Centennial Year 1876 rolled on, two events took place that dramatize the changing profile of the United States. At the Battle of Little Big Horn, General Custer's relentless forays against the Plains Indians came forever to a close with his death in battle, signaling the beginning of the end of the Indian wars. At the same time, the City of Philadelphia was host to the world at a spectacular scientific and technological exhibition demonstrating how brilliantly the American mind had responded to the challenges of the industrial revolution.

Both events may be attributed to the philosophy of Manifest Destiny which had led the Nation toward unification, consolidation, expansion and intensive development of resources.

But by this final quarter of the 19th Century a reaction was definitely setting in. Paralleling a budding of social conscience was the growing awareness of the need for scientific approaches to management of the public lands and resources.

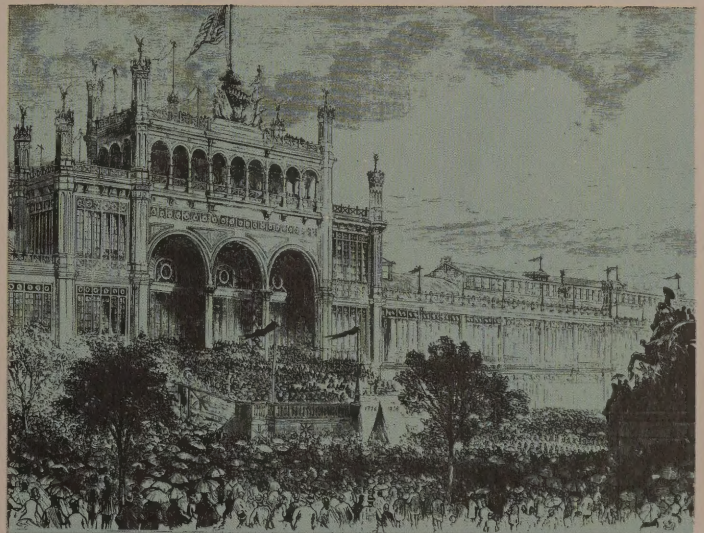
The decennial census report in 1890 announced the closing of the frontier, that symbol of abundance and opportunity that had been the dominant factor in the American outlook for three centuries. The frontier was regarded as a line beyond which there were no more than two settlers per square mile. Expansionism had filled the gap. The conspicuous waste of resources which had been considered of small account as long as the continent was believed to be open-ended began to take on an entirely different look in a world of closed boundaries. The earlier stirrings of conscience were reinforced with a much more practical motive: the growing conviction that after all there really was a bottom to the barrel, a predictable limit to the never-failing treasure-trove of resources that had so bountifully provided for so many Americans for so long.

The expansionist thirst that characterized the previous decades came under sharp scrutiny. To acquire land, to consolidate holdings, to develop resources, to build communities — in sum, to stretch the Union across the continent — had been the goals sought and attained during the first hundred years. But there had been a price, both in human bloodshed and in abuse of the land and resources, recognized as the Nation grew older.

As the years moved onward into the mid-1900's, still another dilemma arose. Our population had grown twentyfold since the beginning of our history, economic affluence had spawned an ever-growing appetite for material goods and living comforts that required the use of more and more resources; the world began to rely upon the United States for manufactured goods and for grain. New voices began to be heard, warning that we must slow down the rate of growth or we would exhaust our supplies of fuel to keep industry going and upset the balance between nature and man by turning too much of our open space into concrete cities and asphalt highways.

These events generated the beginning of what might be called the era of public lands retention. A harbinger of this trend came in 1872 with passage of the Yellowstone Act, establishing by Congressional decree not only a national park but a concept as well. Thus, environmental protection policies were added to the evolving concept of the public domain.

In this chapter we look at some of the new trends, particularly as they affect the missions and objectives of the Department of the Interior, the primary agency concerned with the public domain.



First Flowering of Conservation

In the context of the troubled mood of the latter 19th century, the conservation movement appeared as a welcome opportunity for many Americans to involve themselves in a specific, constructive effort. It materialized ever so slowly, as the confluence of a number of separate environmental concerns, each moved by its own constituency and concerned primarily with a single aspect of the whole problem.

Parks for Pleasuring

One of the earliest manifestations of environmental conservation appeared in the creation of parks in the western wilderness. California, in the 1860's, was a trend-setter, having set aside a small part of the Yosemite Valley as a State park, on lands assigned from the public domain.

Then came the historic precedent of the Yellowstone Act of 1872, not only creating a national park but enunciating the Congressional prerogative of setting aside public land to be used "as a public park or pleasuring ground for the benefit and enjoyment of the people." Yellowstone came into being after an 1870 expedition traversed the area to verify the tales of earlier explorers and trappers. The stories were obviously true, and members of the expedition recognized quickly the area's inherent beauty and sightseeing potential. They recognized as well the dangers that might ensue if commercial interests controlled sightseeing. Members of that Washburn-Langford-Doane expedition and other explorers, artists, and photographers lobbied for a law to protect this spectacular yet fragile region.

An Act to set apart a certain tract of land lying near the head waters of the Yellowstone River as a public park.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled: That the tract of land in the Territory of Montana and Wyoming lying near the head waters of the Yellowstone River and described as follows

is hereby reserved and withdrawn from settlement, occupancy or sale under the laws of the United States, and dedicated and set apart as a public park or pleasuring ground for the benefit and enjoyment of the people: *****

2. Said public park shall be under the exclusive control of the Secretary of the Interior whose duty it shall be, *****

Dec 16, 1871. Read twice, referred to the Committee on the Public Lands & ordered to be printed.

Introduced by
Wm H. Clagett.

(Above) Draft of the original Yellowstone National Park bill, in the handwriting of the author, Montana Territory Delegate William H. Clagett.

(Opposite Page) President Benjamin Harrison concurred in proposal to place the Casa Grande Indian ruins in Arizona under Interior Department protection.

Along with cultural treasures, the West holds such scenic wonders as this solidified geyser, photographed by J. K. Hillers during the Yellowstone explorations.

Civil War veterans conceived an adaptation of the Yellowstone preservation concept. Hoping to commemorate their deeds in perpetuity by making their battlegrounds national monuments, they were instrumental in persuading Congress to create Chickamauga and Chattanooga National Military Parks in 1890 and to provide similar preservation of Shiloh, Gettysburg, Vicksburg, and a variety of other battle sites. Congress placed these under the jurisdiction of the Secretary of War.

Another early adaptation of the Yellowstone preservation idea came from concerned archeologists and scientists who observed the destruction of prehistoric Indian ruins and sites on public land in the Southwest. Their interest was directed first to a specific site, the Casa Grande Ruins in Arizona, and resulted in Congressional authorization for its repair in 1889 and reservation as a site of archeological value in 1892. Because a number of other prehistoric ruins were also threatened by vandalism and destruction, the American Anthropological Association lobbied for a general Federal preservation policy.

In 1906 Congress passed the Antiquities Act, under which the President could "declare by public proclamation historic landmarks, historic and prehistoric structures of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and . . . reserve as a part, thereof, parcels of land . . ." Between 1906 and 1969, 87 national monuments were proclaimed, including many, such as western forts and colonial sites, that did not conform to the kind anticipated by designers of the legislation.

The Secretary of the Interior

June 21, 1892.

Recommends the reservation of
certain lands in Arizona for
the protection of the Casa
Grande ruin.

Executive Mansion

June 22, 1892
Let the lands described

within be reserved for the protection of the Casa Grande ruin as recommended by the Secretary of the Interior.

Rufus Harrison



The network of parks and monuments evolved piecemeal, in response to the concerns of special citizen groups and in the face of opposition from those who considered the public lands as a resource for development. The Secretary of the Interior's inability to control poachers, grazers, and souvenir hunters in Yellowstone, for instance, prompted him to request help from the Secretary of War. In 1886 the First U.S. Cavalry began a 30-year administration of the park.

President Theodore Roosevelt's contagious enthusiasm for conservation broadened the support for national parks, but an active campaign for a national park agency really began in 1915, when Secretary of the Interior Franklin K. Lane hired Stephen T. Mather as a special assistant on parks. Mather, an executive of the Twenty Mule Team Borax Company, was offered the job after he publicly complained about conditions he had found in Yosemite and Sequoia.

Mather genuinely loved parks and knew the people whose influence and interest were needed to get legislation for a central park organization. With the help of Horace Albright, a young California lawyer, Mather traveled widely, held conferences, and began his most successful program of introducing politicians, writers, and public relations people to the irresistible beauties of Yosemite and Yellowstone. President Wilson signed the bill creating the National Park Service in August 1916. Mather became the first Director.

Early instructions from the Secretary of the Interior governed both Mather's policies and those of his successors: "First, that the national parks must be maintained in absolutely unimpaired form for the use of future generations as well as those of our own time; second, that they are set aside for the use, observation, health, and pleasure of the people; and third, that the national interest must dictate all decisions affecting public or private enterprise in the parks."

In studying prospective parks Lane ordered the National Park Service to seek 'scenery of supreme and distinctive quality or some natural features so extraordinary or unique as to be of national interest and importance.'

Mather himself, who has been described as "a man of prodigious and explosive energy, a born promoter", also set some lasting precedents for the Service. He removed Army administrators from several parks and recruited superintendents committed to conservation principles, prohibited permanent cattle and sheep grazing in the parks, launched a concessionaire system for visitor services, adapted parks to the use of automobiles in anticipation of a trend, enlisted private support to supplant meager appropriations, and resisted steadfastly the building of dams in the scenic park waterways of the developing West.

(Below) Horace Albright, Jimmie Johnson, Charles Cook (who explored Yellowstone in 1869) and Stephen T. Mather, pose in 1925 before the Number One motorized vehicle of the National Park Service.

(Opposite Page), From the top: A Spanish inscription photographed during the Wheeler expedition of 1873; horse-drawn odometer used to measure distances in the wilds; the Hayden expedition photographed by W. H. Jackson in 1871.



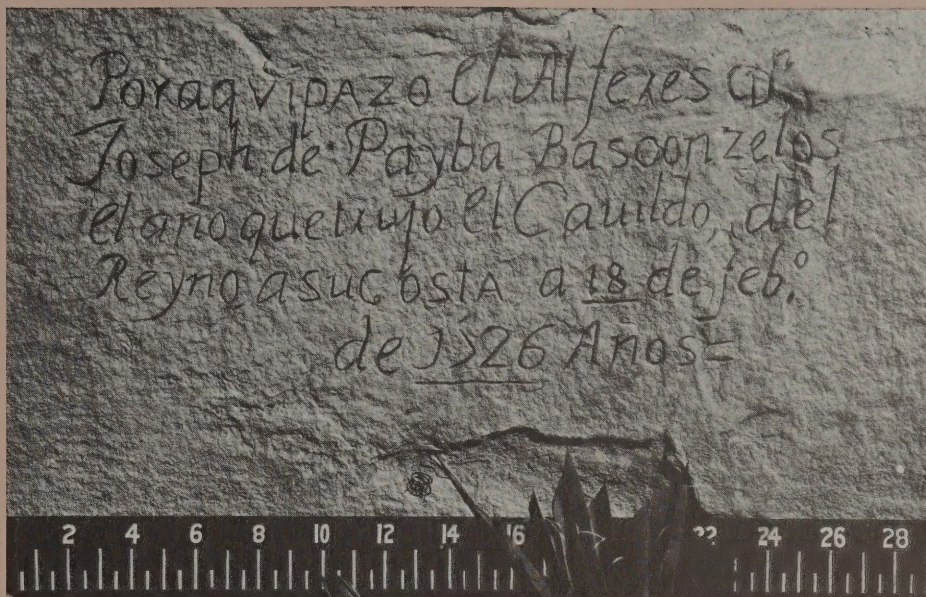
The Borning of the Geological Survey and the Biological Survey

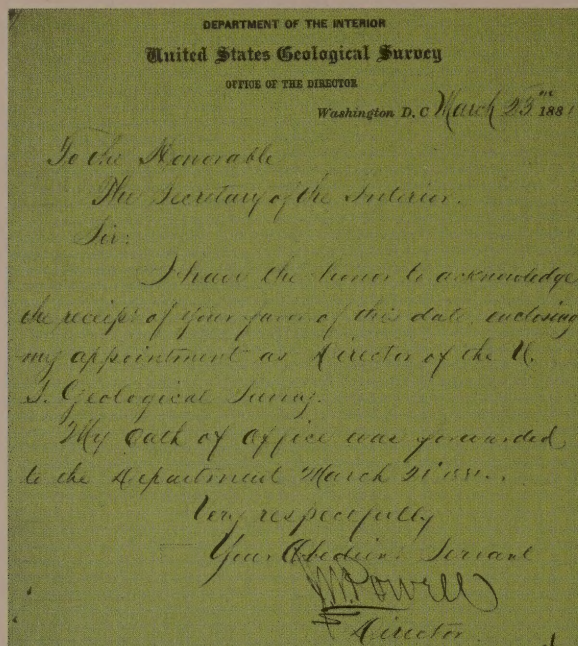
The westward rush of post-war expansion created an overwhelming demand for definitive, practical information about the conditions that settlers would face in that region. Four major surveys and several smaller ones materialized to answer this need.

The first of the principal surveys was the geologic exploration of the 40th parallel, funded and sponsored by the War Department, but constituted with a corps of civilian scientists headed by Clarence King. Its purpose was scientific, and, between 1867 and 1873, the team covered a swath of territory about a hundred miles wide along the axis of the Union Pacific-Central Pacific Railroad extending from the Sierra Nevada to the Front Range of the Rockies. Scientific investigation of the potential of the West was raised to a new high, and public interest was aroused.

At about the same time, the exploits of a college professor, John Wesley Powell, in uncovering secrets of the Grand Canyon stirred a tidal wave of public interest in the scientific side of resources development. So popular was Powell's first trip down the Colorado that he had no difficulty in persuading Congress to fund a geographical and topographical survey of the Colorado River. By 1874, Congress had extended Powell's survey to the entire Rocky Mountain region, under direction of the Secretary of the Interior.

Still two other scientific surveys began in this same general period, the ultimate results of which led to the formation of the U.S. Geological Survey in 1879, with Clarence King as first Director.





One of these surveys, headed by Ferdinand Hayden, was under the direction of the General Land Office of the Interior Department. It became known as the Geologic and Geographic Survey of the Territories, and focused on the Rocky Mountain region from the Montana Territory all the way south to Santa Fe. Hayden's explorations of the Rockies brought him into conflict with an Army survey commanded by George M. Wheeler. The ultimate acrimonious confrontation between the War Department and the civilian scientific community led to a Congressional investigation of overlapping expenditures, and finally a Congressionally sponsored study by the National Academy of Sciences which recommended creation of a single official geological survey agency to function under the Department of the Interior. Thus was born the U.S. Geological Survey.

Ornithology became popularized at about the same time, partially as an outgrowth of interest in scientific exploration of the territories. An American Ornithologists Union was formed in 1883, and it lobbied effectively to convince Congress that the Federal Government should undertake studies of the interrelation of birds on agriculture and the habits of migratory wildlife in relation to insects and plants. By 1896, a Division of Biological Survey was established with the Department of Agriculture, the forerunner of the Interior Department's Fish and Wildlife Service which was constituted in 1940.

(Top) Maj. John Wesley Powell (figure at extreme left) was also an Indian Commissioner. This conference in southern Utah was photographed by J. K. Hillers in 1874. Courtesy Smithsonian Institution.

(Bottom) W. H. Jackson himself, whose photo records, along with those of Hillers and others, reveal the wonders of the untamed West.

Water and Powell

John Wesley Powell's landmark report, "Lands of the Arid Region of the United States," resulted from his explorations of the Rockies and the Colorado for the Federal Government. It set the tone for a radical departure in policy governing the sale and distribution of public lands. He contended that the "arid region" — comprising more than 40 percent of the total area of the contiguous United States — did not lend itself to homesteading in small 160-acre parcels. Moreover, he argued that the rigid rectilinear grid system of section and township used by the General Land Office was inhibiting to irrigation, which was necessary in the arid regions.

In effect, Powell argued that the yeoman farmer of the arid West would need a much larger acreage for a productive unit. He proposed a grazing homestead of 2560 acres and the formation of cooperative grazing and irrigation districts to assist individual farmers or ranchers to overcome the arid environments. Water, not land, he foresaw, was the key to settlement of the arid West. The special circumstances of the western lands indicated the need for a system of benign gerrymandering to assure the optimum number of frontages to the available, very limited water supplies. Accordingly, he proposed that the western lands be classified according to use-potential.

"The right to use water," Powell contended, "should inhere in the land to be irrigated, and water rights should go with land titles."

Consequently, a Desert Lands Act was passed in 1877. It was, however, a compromise measure, in deference to those who objected to the size of grazing tracts advocated by Powell. Any entryman who successfully brought water to public land was allowed to buy the land at a maximum of \$1.25 per acre for 320 acres.



Desert Moods

Powell's was the first substantial voice to call for a major government role in development of the West. He said that farming and settlement of much of the West could be successful only if the wet and dry cycles could be moderated by irrigation. He recognized that major dams and storage reservoirs should be constructed, with the Government advancing the money and supervising the work. "Thousands of millions of money must be used . . . Millions of men are to labor . . . This is a great nation, the government is powerful; shall it engage in the work?"

Yet, Powell was especially sensitive to the need for local autonomy. "The proposition I make," he said, "is that the entire arid region be organized into natural hydrologic districts, each one to be a commonwealth . . . Each community should possess its own irrigation works; it would have to erect diverting dams, dig canals and construct reservoirs . . ."

(Opposite Page) Buffalo Bill Dam on the Shoshone River in Wyoming, one of the first concrete dams; hauling pipes to irrigate the desert, circa 1915; irrigation project under way, circa 1909; and the arch at Montrose, Colorado on September 23, 1909, the day the water came in.

By 1881, John Wesley Powell had become Director of the U.S. Geological Survey, the agency that was beginning to serve as the means by which science could become a tool of public policymaking.

Five years later came a winter so severe in the West that the cattle industry was nearly destroyed, and the following summer a drought virtually ruined all crops. This was the start of public clamor for irrigation projects. Congress authorized an irrigation survey, and, to prevent speculation, specified that all lands that might be irrigated by reservoirs and canals located by the Survey should be withdrawn from entry. Because no one knew which lands were irrigable until the Survey certified them, the public domain was in effect closed to further entry until the Irrigation Survey was completed. By Powell's own estimates this would take six or seven years — and an outraged Western delegation in Congress took vengeance on the Geological Survey by eliminating its irrigation survey funds for 1891. Powell resigned as Director in 1894 after the total USGS funding was drastically cut back.

However, Powell's thesis lived on, and during Theodore Roosevelt's Presidency Congress passed reclamation legislation (1902) establishing a Reclamation Service within the Geological Survey. Then Roosevelt created an Inland Waterways Commission to develop a comprehensive plan for multipurpose development of water resources in the semi-arid West. A Bureau of Reclamation was formed within the Department of the Interior in 1906. It became the agency that developed both irrigation and hydropower water management systems in 17 western States over the several decades immediately following.

Water and power opened large new areas of inhospitable and sometimes uninhabitable land to settlement. The benefits spread like ripples far beyond the immediate irrigated area. Reclamation projects provided fruit, vegetables, animal feed, and sometimes power and water, sustaining communities growing up like mushrooms.

Unique among public works, the projects were largely paid for by their beneficiaries. Farmers and communities signed repayment contracts — promising to return most of the costs — before the work ever got underway. The concept reflected Powell's prophetic vision beyond anything he dreamed.

SURVEY LOSES ITS HEAD

Maj. J. W. Powell Resigns His Place as Director.

Made Necessary by the Painful Condition of His Wounded Arm—Will Retain His Position in the Bureau of Ethnology—His Military and Scientific History—Wants Prof. Wolcott to Succeed Him.

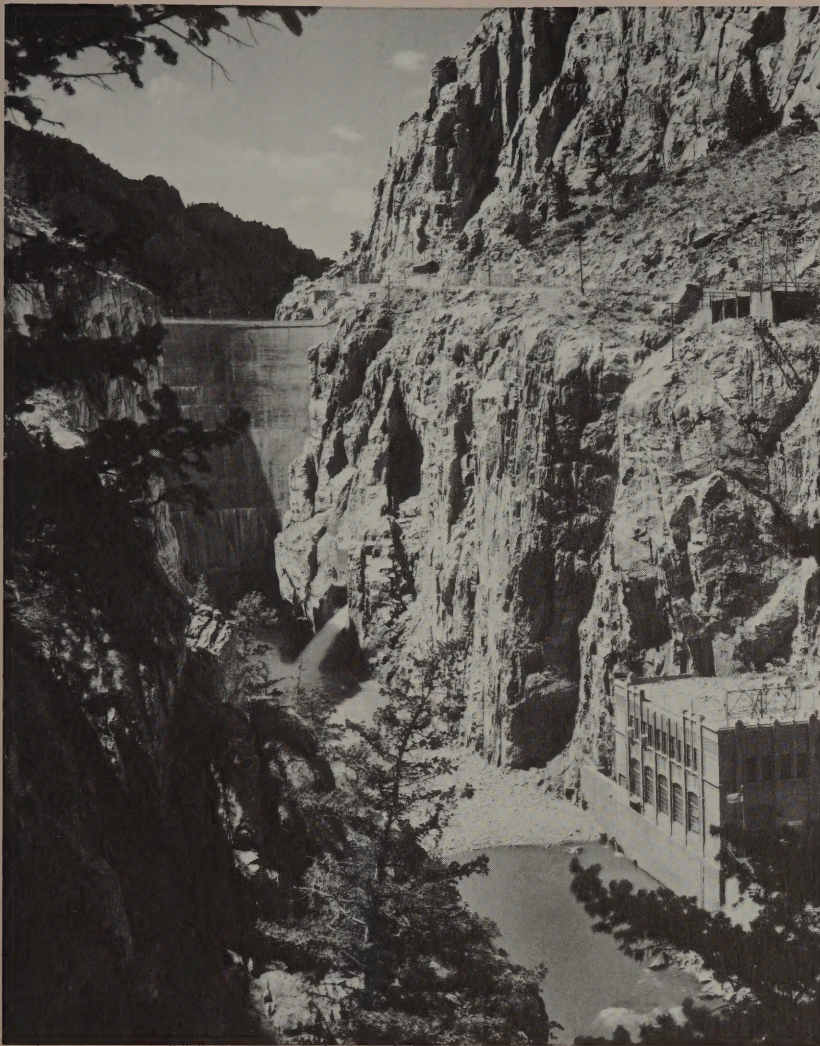
Great surprise will be felt in the scientific, literary and social circles of Washington and other cities by the announcement of the resignation of Maj. J. W. Powell, director of the United States Geological Survey.

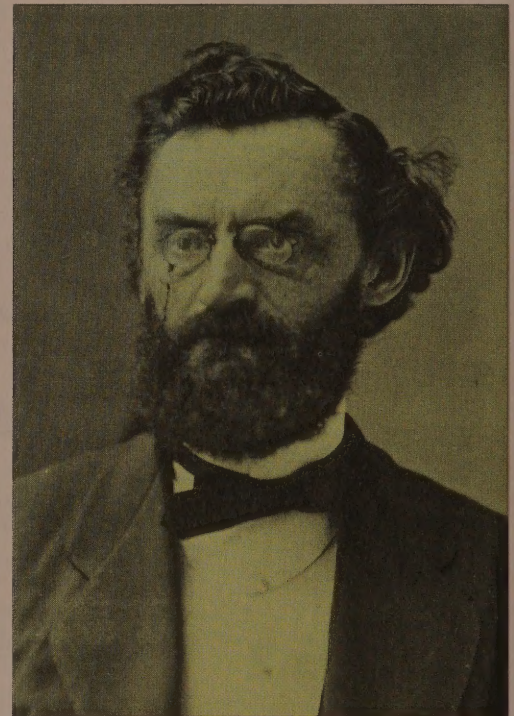
Action was taken by Maj. Powell on the 8th instant in a letter to the President, transmitted through the Secretary of the Interior. Response was made on the 9th instant by Acting Secretary Sims, of the Interior Department, as follows:

"SIR: By direction of the President, I have the honor to advise you that your resignation of the office of director of the Geological Survey, tendered in your letter of the 8th instant, to take effect from and after the 30th of June next, has been accepted.

The President and the Secretary of the Interior greatly regret that the state of your health rendered necessary your re-

Washington Daily News
May 11, 1894





A Vermont Yankee, a German Immigrant, and Western Forests

In the 1870's a few voices, mainly in the East and mainly in scientific and intellectual circles, began to plead for new land policies that recognized the importance of preserving the growth cycle in the forest lands. Less well known than many, but more influential than most in turning public sentiment was George Perkins Marsh. A sawmill operator in the Green Mountains of Vermont, a Member of Congress, and later a diplomat, Marsh possessed an intellectual curiosity that made him a close observer of the land and mankind's relationships with it. Although his observations had begun in his native Vermont, he added to his storehouse of knowledge from his later observations in Europe and Asia Minor. He saw in the Old World the consequences of land misuse: former seaports turned into inland towns because overuse of the hinterland had silted up the harbors; forests decimated by urban expansion; water polluted from siltation and urban sewage.

The result of Marsh's observations were set forth in his monumental treatise, *Man and Nature*, which examined history, geography and ecology from the perspective of man's use and abuse of land. Marsh was the first of the advocates of land use planning.

He summed up his own thesis: "We are never justified in assuming a force to be insignificant because its measure is unknown, or even because no physical effect can now be traced to it."

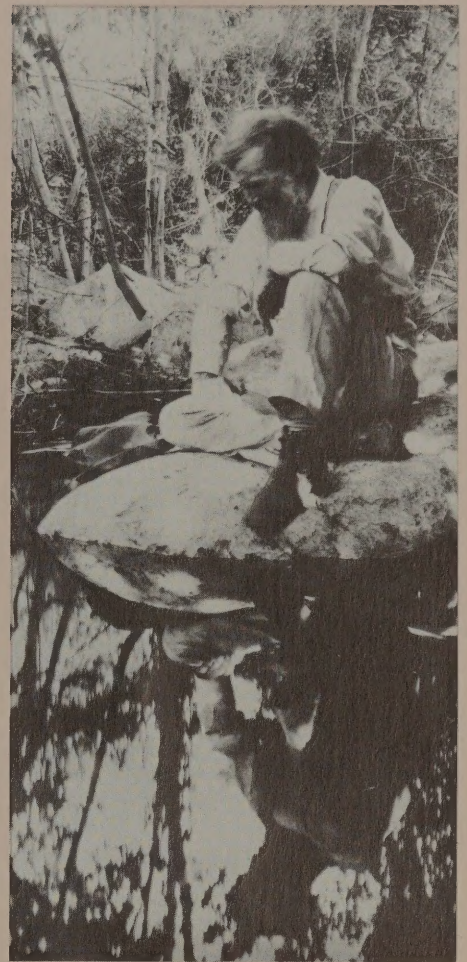
Applying this rule to the situation in the United States in the latter decades of the 19th century, Marsh called attention to the destruction already visible in the forest lands.

In 1877, President Hayes appointed a Secretary of the Interior who understood both Marsh's call for harmonious land use and the need for forestry reform. Carl Schurz, who served until 1881, brought intimate knowledge of forest management to his position.

Schurz was among the thousands of Germans who migrated to the United States in the 19th century. Like many, he made his home in the Midwest, in Wisconsin. Unlike most, however, he had already become a political figure — a reformist — in his native country, and his career in America led him quickly into Republican politics during the Lincoln era. Abolition of slavery, Indian affairs reform, civil service reform, and public lands management reform were among the numerous issues he tackled in his various public roles, both in politics and as a journalist and newspaper editor.

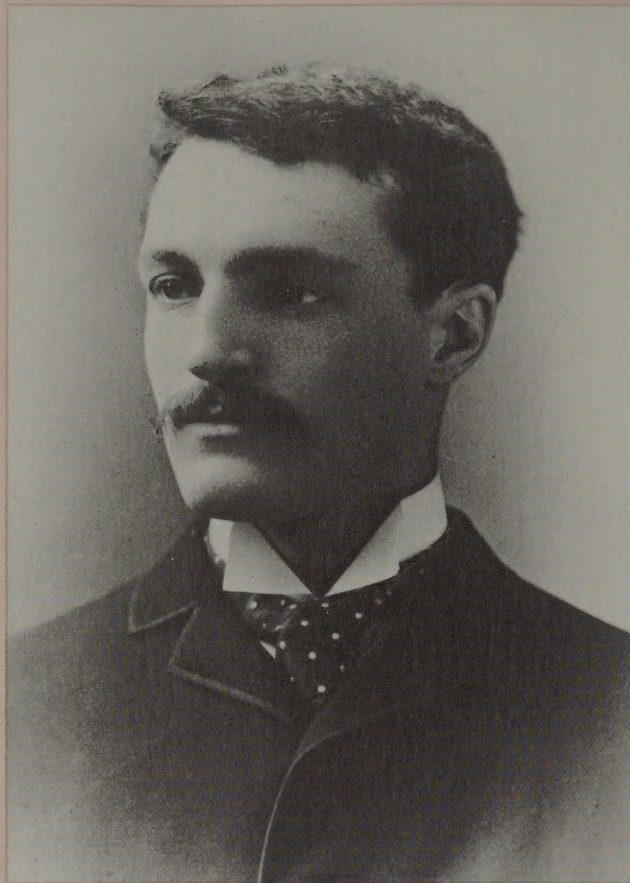
As Secretary of the Interior, Schurz became a leading early exponent of conservation. He initiated an intensive study of forest depredation, outlined in his first annual report. He accused lumbermen of "not stealing merely trees, but whole forests." He was concerned about the dangers of cutting down the forests for lucrative lumbering enterprises without any attempt to replant.

He proposed fundamental changes: a system of Federal forest reserves to be combined with reforestation practices, charges for the use of national resources such as timber and penalties for willful setting of forest fires. His reforms were branded as un-American. He was accused of trying to impose German-style conservation methods upon American soil. "If I should live a hundred years," Schurz complained, "my enemies would still call me a Dutchman." Despite all Schurz's pleading, Congress passed a bill which effectively legalized the cutting of timber on government lands, although some forest reserves were set aside a few years later.



(Opposite Page, Clockwise) Forest officers sending message by heliograph in 1915; old logging camp in the Colorado mountains; Carl Schurz, Secretary of the Interior, 1877-81; and a forest ranger station in New Mexico in 1908.

(Above) John Muir, naturalist and conservationist, is shown here in contemplation. He was also an activist against the abuse of the wilderness. Among the targets of his wrath were lumberers who plundered the forests on public lands. In a 1901 book called *Our National Parks*, Muir wrote: "During the seven years from 1881 to 1887, the value of the timber reported stolen from the Government lands was \$36,719,935 and the amount recovered was \$478,073, while the cost of the services of the special agents alone was \$455,000. . ."



Pinchot and His President

On the whole, however, it was a time of concern for taking better care of our natural resources. Protection of wildlife enlisted the efforts of both sportsmen and naturalists in every state. The National Audubon Society and the Sierra Club were founded. Chautauqua was organized in New York and spread like fire through the East and Midwest — a togetherness movement that offered outdoor festivities, educational seminars, all keynoting appreciation for nature. Even the Federal Government responded, creating in 1903 the first wildlife refuge and in 1908 the first protective bison range. These two refuges formed the nucleus of a national system that grew by 1976 to more than 370 units and 32 million acres.

But it remained for Gifford Pinchot to bring it all together. By his own account:

“In plain words, a man by the name of Pinchot was riding a horse by the name of Jim on the Ridge Road in Rock Creek Park near Washington . . . And while he rode, he thought . . .

“The forest and its relation to streams and inland navigation, to water power and flood control; to the soil and its erosion; to coal and oil and other minerals; to fish and game; and many other possible uses or waste of natural resources — these questions would not let him be. What had all these to do with Forestry? And what had Forestry to do with them?



"...Suddenly there flashed through my head that there was a unity in this complication — that the relation of one resource to another was not the end of the story. Here were no longer a lot of different, independent, and often antagonistic questions, each on its own separate little island, as we had been in the habit of thinking. In place of them, here was one single question with many parts. Seen in this new light, all these separate questions fitted into and made up the one great central problem of the use of the earth for the good of man."

Always utilitarian, Pinchot envisioned managing forests as a crop, to insure a planned renewal of the resources being harvested. His objectives were economic and his methods intensely practical; they reflected the governing consensus of the movement that conservation was essential to the Nation's continued growth and economic well being.

Pinchot was a gifted publicist and a born showman, and he attracted the active interest and support of the dynamic President Theodore Roosevelt.

Pinchot was instrumental in placing most forestry management activities in the Department of Agriculture. In 1899 at the request of a new Secretary of the Interior, Ethan Allan Hitchcock, Pinchot's Division of Forestry in the Department of Agriculture began advising the General Land Office on the management of the forest reserves. The over-centralized operations of the General Land Office and the use of non-professionals in forest management jobs rubbed Pinchot very much the wrong way. By 1905 he had convinced Roosevelt that there should be a transfer of the forest reserves out of the General Land Office and into the Department of Agriculture.

Next, Pinchot prevailed upon Roosevelt to call a White House Conference of Governors (and a thousand other prestigious attendees) on conservation. The year was 1908. The conference was orchestrated by Pinchot and his associate W J McGee, and was intended to enlist the active support of the states.

A paragraph from Roosevelt's welcoming address is illustrative of the theme of the conference:

"... We have become great in a material sense because of the lavish use of our resources, and we have just reason to be proud of our growth. But the time has come to inquire seriously what will happen when our forests are gone, when the coal, the iron, the oil, and the gas are exhausted, when the soils shall have been still further impoverished and washed into the streams, polluting the rivers, denuding the fields, and obstructing navigation."

(Opposite Page) At top, the picture of Gifford Pinchot that appeared in his Yale College yearbook; and, below, Pinchot in a German forest grove with children of a German forester.

(This Page) Teddy Roosevelt rarely passed up a chance to do the outdoor thing. Not only an outdoor camper, as shown here, he once owned a ranch in the Dakota "bad-lands" where he first experienced the call of the wild.



Resource management for commercial purposes was the dominant note of the conservation movement, as conceived by Pinchot and Roosevelt. A number of discordant variations on the theme were contributed by wilderness champions such as John Muir and Robert Underwood Johnson. These and other exponents of wilderness preservation grasped, identified, and articulated a large body of active but largely unspoken sentiments that were held by great numbers of people. Even at this early date there existed the concept that the conservation movement should be concerned with the quality of the environment as well as with the stock of physical resources to be managed. On the whole, it drew some support from the leaders of the movement, but not enough to satisfy the demands of the preservationists.

Both Muir and Johnson, who had originally allied themselves with Pinchot in his early battles with the timber barons, eventually disassociated themselves from him, regarding him as hopelessly utilitarian. The conservation movement was soon rent by disagreement over a proposed dam to create a water reserve for the City of San Francisco and a site for hydro-electric power generation in Yosemite National Park that would destroy the beauty of the Hetch Hetchy Valley.

By 1913, most of the steam had gone out of the movement, which began to decline as soon as Theodore Roosevelt left the White House in 1909.

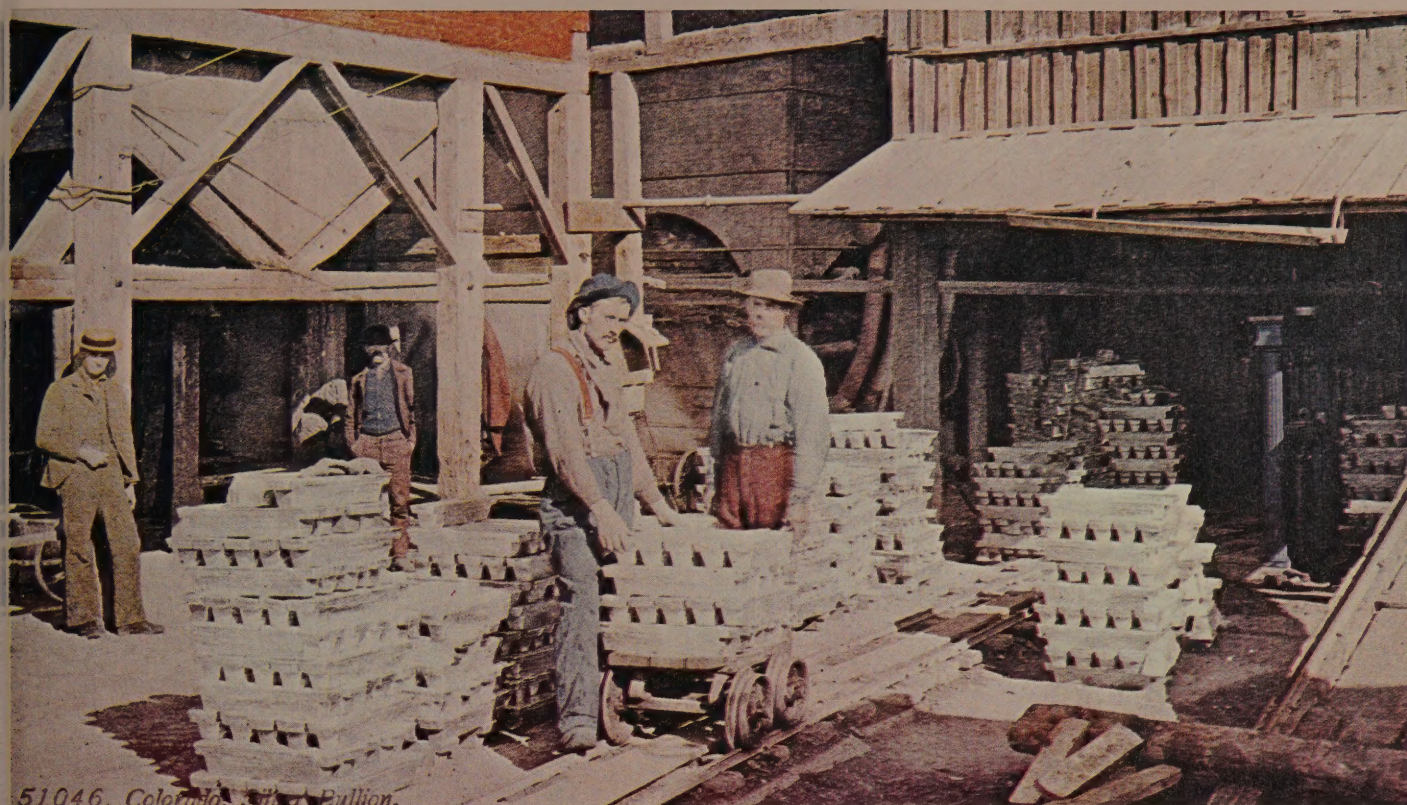
Nevertheless, the momentum that had been generated was enough to carry on the work of the movement in an unobtrusive but nevertheless effective way over the next twenty years. Nationwide forest-fire protection became a reality. Federal soil conservation work began. Giant flood-control programs for the Mississippi Valley were started. Construction began on the Boulder Canyon project — the first Federally sponsored large-scale multiple purpose river basin development. A network of migratory bird sanc-

tuaries was organized. The National Park Service was created in 1916 and the parks multiplied and became an increasingly popular American institution. Recreational needs were beginning to be recognized, first in 1915 when Congress authorized the Forest Service in the Agriculture Department to lease forest sites for hotels, homes and other facilities for public convenience, and further in 1924 when President Calvin Coolidge appointed a Cabinet-level outdoor recreation committee, stating that "country recreation for as many of our people as possible should be our objective."

It is a mistake to believe that conservation totally languished after Pinchot and Roosevelt left office. It continued to mature, although without fanfare. But before its widespread emergence once again, public lands and resources suffered from renewed depredations.

(Below) T.R. again: riding through the arch cut in a giant redwood in the company of John Muir; and officiating at the dedication of the Roosevelt Dam in Arizona on March 11, 1911.





51046. Colorado. Silver Bullion.



The Developmental Extreme

Throughout the 19th century and on into the 20th, public lands policies reflected the pull and tug between advocates of resources conservation and those who viewed the land, minerals, timber and water as commodities to be used for maximum financial gain. In historical perspective, this situation was inevitable. The policies of expediency, propounded decades earlier, had succeeded in their objective of building a nation. Alexander Hamilton had espoused sale of the public lands to enhance the Federal Treasury. Thomas Jefferson, Andrew Jackson, James Polk, and nearly all other subsequent 19th century Presidents and other officials emphasized acquisition, development and settlement for valid and practical reasons.

Here and there, during early times, a voice or two had been raised in defense of Nature. Thoreau gave his unqualified blessing to the wild state and George Catlin first proposed a national park in 1832. But, by and large, the westward march to empire and Manifest Destiny proceeded virtually unrestrained. The bent of the people to lap up nature's bounties was actively encouraged by government policy. The homestead laws induced settlers by the millions to invade the West. Railroad construction was subsidized by land grants of enormous potential value, with little in the way of constraints. The Mining Law of 1872 was in effect a homestead act for prospectors, conveying ownership not only of any minerals they found but of the surface land, as well.

Even the conservation principles of Gifford Pinchot and Theodore Roosevelt were aimed at harvesting and renewing resources for maximum economic benefit. Mining, railroad construction, lumbering, grazing, and the building of cities were good for the country, it was logically argued, and therefore certain methods by which some of these enterprises expanded were not seriously questioned by either the policy-makers or the legislators.

Horace Greeley's counsel to "Go west, young man" was more than just a lead-line in an editorial. It was the authentic voice of the Nation. Americans romanticized the way they tackled the taming of the wilderness. To bring the virtues of civilization to the back country was not only profitable, it was almost a moral duty. Achievement was defined in terms of winning the battle against the wild, of populating the empty spaces with "fruitful farms and flourishing cities."

(Below) An official message for Sitting Bull from the Commissioner of Indian Affairs, 1875.

(Opposite Page) At top, a Frederic Remington bronze which he called "Coming Through the Rye", now in the collection of the Corcoran Gallery of Art. (Bottom) A photo of Lawton, Oklahoma on August 6, 1901, the day the General Land Office began parceling out public lands there.

Department of the Interior
Office Indian Affairs
Dec 6 1875

114. S. G. Howard Esq.
H. S. Ind. Agent
Sitting Bull Agency
White Clay, Co. Dakota

Sir

I am instructed by the Hon. Secretary of the Interior, under date of the 3rd instant, to direct you to notify Sitting Bull and other wild and lawless bands of Sioux residing within the limits of their reservation, who have over the Indian Dakota and Eastern Montana including the rich valley of the Yellowstone and Powder rivers and make war on the Cheyennes, Arapahoes, Kiowa Indians, Comanches, Plains Indians, Piegans, Gros and other friendly tribes, that unless they shall remove within the limits of their reservation (and remain there) before the 31st of January next they shall be deemed hostile and treated accordingly by the military force.

I will acknowledge the receipt of this order and notify this Office of the execution of it.

Very respectfully
Your obt. servant
B. P. Smith
Commissioner

Samuel H. Brown Esq.
S. G. Howard Esq.
H. S. Ind. Agent
Cheyenne River Agency, D. T.

Wm. J. Burke Esq.
H. S. Ind. Agent
Standing Rock Agency, D. T.

Boomers — and More Bad Luck for Indians

The Oklahoma land rush of the 1880's is an illustration of what was happening. Railroad interests, desirous of building substantial settlements along their routes, joined with the "boomers" — the land speculators who had their eyes upon the farmland in Oklahoma — to push for opening the Indian territory to settlement. The two groups energetically and successfully descended on Congress with petitions, resolutions and bills aimed at opening the area.

The Indian title was extinguished by Congress in 1880. In January 1889 the Creeks and Seminoles sold the Oklahoma district for \$4 million. Two months later Congress authorized it to be opened for settlement under the Homestead Act, and in March 1889 President Benjamin Harrison issued a proclamation throwing open the area at noon in April 22, 1889.

On that April morning 100,000 land seekers deployed themselves, mostly along the northern border, with horses, wagons, hacks, carriages, bicycles. Along the borders fifteen trains were backed up along the Santa Fe Railroad with passengers clinging to car roofs.

All along the boundary, troops patrolled to keep the "Sooners" from slipping in ahead of the opening. At noon Army officers with synchronized watches ordered the firing of guns to signal that the run was on. Within hours 1,920,000 acres of Homestead claims were staked. On the evening of the first day Guthrie had 15,000 inhabitants and Oklahoma City 10,000.

A year later the Oklahoma Territory was organized. Then, in 1893, 6,000,000 acres of the Cherokee Outlet were opened in a similar rush, thwarting the expectation of the eastern Indians who had been removed to the arid trans-Mississippi region that one day an Indian State would be formed there.





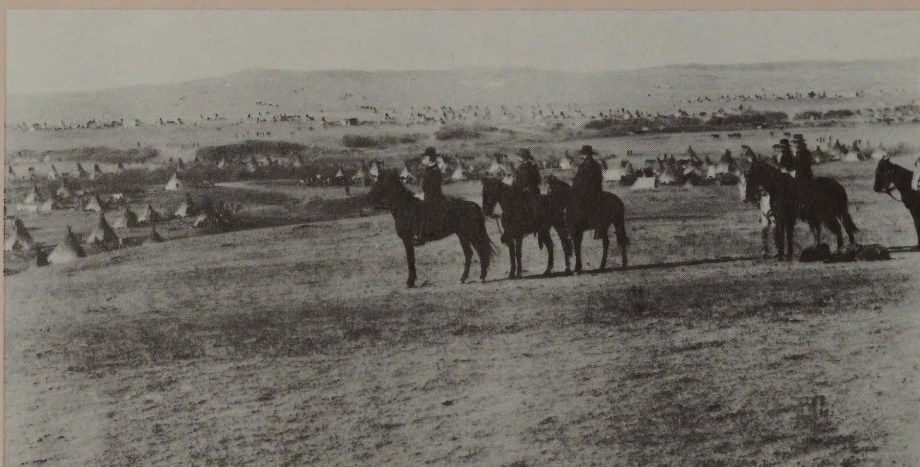
The legislative way for opening Indian territory had been paved by new Indian policy established in 1887 by the Indian Allotment Act. That well-intentioned but subsequently disastrous law came as the result of a growing public outcry against the government treatment of the Indians.

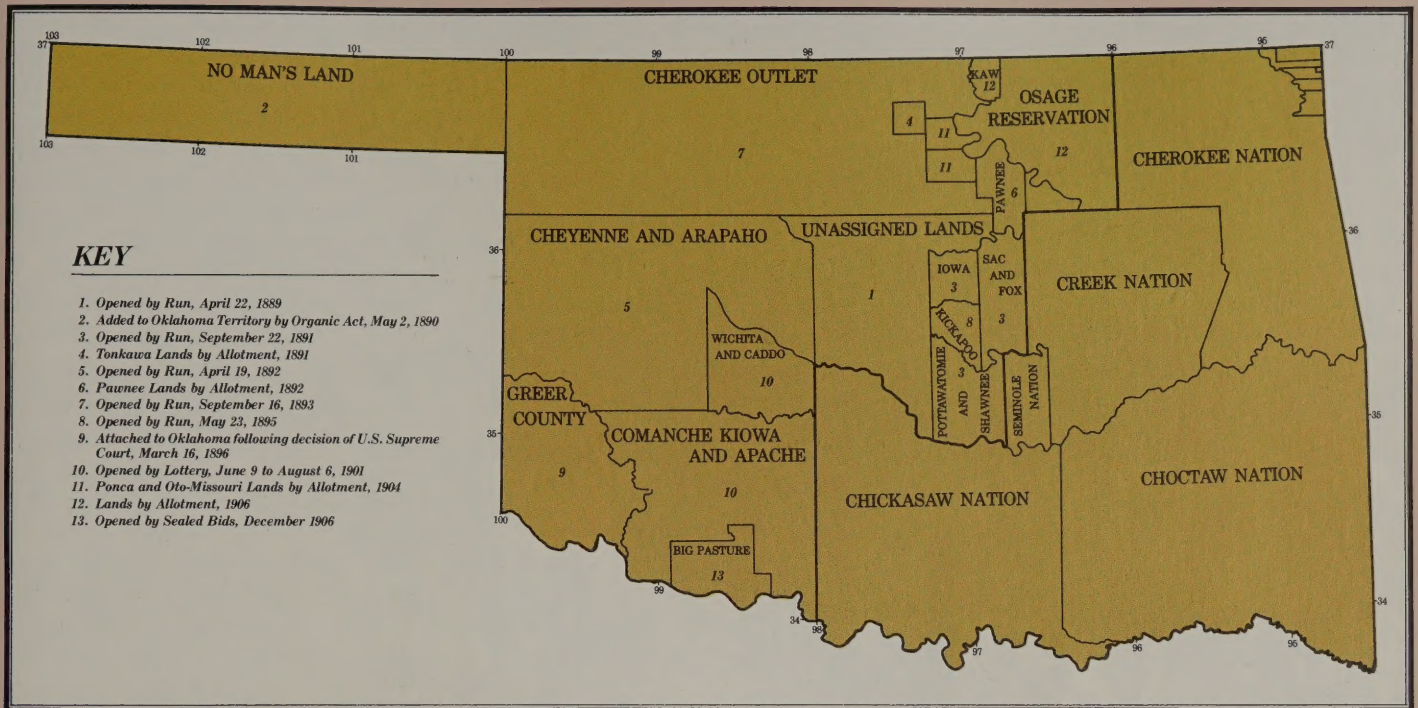
Known also as the Dawes Act after its chief sponsor, Senator Charles Dawes of Massachusetts, it was the product of well-meaning advocates of Indian policy reform.

The Dawes Act was an attempt to assimilate Indians into the general population by offering them individual land allotments. This system unfortunately was counter to the cultural and tribal practices of the tribes, who used land collectively rather than individually. Eventually many individual Indian allottees sold their allotments, thus destroying any chance of a landed estate for future generations.

Even Senator Dawes foresaw the potential for abuse in the law he sponsored. Shortly before final passage of the Act he warned: "if the bill becomes law and is administered in bad faith, and by bad men, it first wipes out all of the heritage of the Indians, and then it scatters him among our people without preparation for citizenship — and without the capability of maintaining himself, really in a worse condition than he can be now."

Much Indian tribal land was lost because of this legislation. As a facet of the assimilation effort, the Bureau of Indian Affairs instituted a system of boarding schools for Indian children designed to teach them English and skills for farming and mechanical trades. Another half century passed before an effort was made to restore tribal identity through the Indian Reorganization Act of 1934.





(This Page) Map data is from the *Historical Atlas of Oklahoma* by John W. Morris and Edwin C. McReynolds, University of Oklahoma Press, 1965. Below is Geronimo, fiercest of the Apaches.

(Opposite Page) Displaced persons. Westward expansion intruded on the lives of most Indians, among them Chief Sitting Bull, the Sioux, shown posing here with Buffalo Bill; Blackfoot families such as this Montana group; and numerous other tribes who were often removed from their habitual regions and incarcerated in camps under the vigilant watch of armed troops.

Eating Up the Range

Inadequacy in public land policy led to war on the range and deterioration of grazing. The troubles began in Kansas and Nebraska, where homesteaders crowded out ranchers. The public land laws did not allow ownership of sufficient acreage for ranchers to operate wholly on their own land. The two States eventually enacted laws prohibiting herds from entering.

The ranching industry was eventually forced to the short-grass prairies farther west where water was scarce. However, ranchers shrewdly bought or homesteaded the public lands along creeks and water holes, then turned their stock loose on open ranges which were too arid to have attracted many homesteaders. Some of them fenced in large areas of public lands to control their growing herds, but this practice was declared illegal in the 1880's.

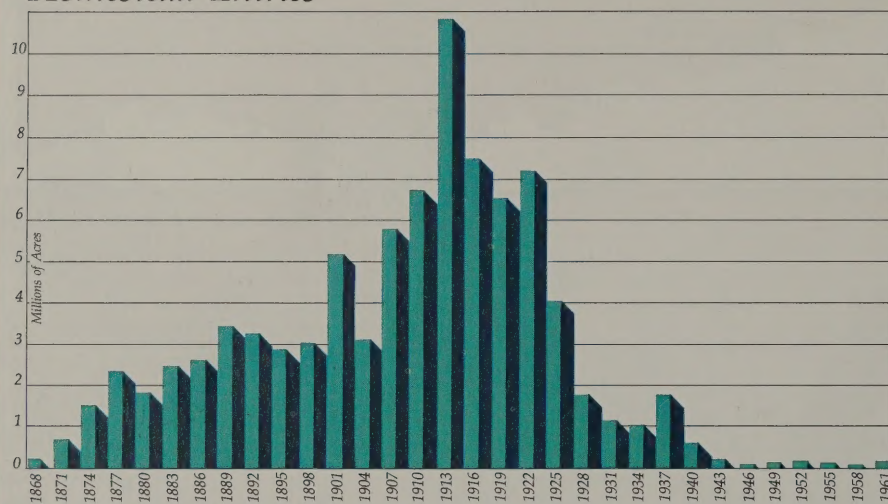
Local livestock associations set the rules of the range — peace-keeping arrangements, rather than conservation measures. When an association could not settle who was to graze where and when, the contestants sometimes decided with a shootout. Sheepmen complicated these arrangements of early western ranching by trailing their herds from seasonal range to seasonal range, ignoring local cattle understandings.

The land itself wore away under the brunt of this crude system of natural resource allocation. By the turn of the 20th century Gifford Pinchot and President Roosevelt and others sought to bring public land grazing under Federal regulation.

Another and even more comprehensive renewal plan was also proposed, which called for total river basin management. The intent was to protect agriculture and industry through development of water resources for multi-purpose uses — not only for irrigation but also for flood control, navigation, and hydroelectric power production. It was anticipated that the sale of electricity would defray the water control projects.

The grasslands leasing plan was defeated in Congress in 1907, the victim of the controversies among cattlemen, sheepmen, farmers and watershed protectionists. The river basin plan was also defeated when the Army Corps of Engineers, long charged with public works in navigable rivers, raised effective opposition to giving Interior's Inland Waterways Commission a statutory mission of comprehensive river-basin planning. Scientific lands management and land reclamation, if applied at this relatively early stage of western development, could have prevented the disastrous reversion to desert that became critical by the 1930's.

Homestead Entries







Down Go the Woods and the Woodland Creatures

Official interest in the national parks also languished. In 1911 President William Howard Taft, summed up the situation pithily in a speech at the annual convention of the American Civic Association:

"Now, we have in the United States a great many natural wonders, and in that lazy way we have in our government of first taking up one thing and then another, we have set aside a number of national parks, and what are called 'national monuments'. We have said to ourselves: 'These cannot get away. We have surrounded them by a law which makes them necessarily government property forever, and we will wait in our own good time to make them useful . . . Since the Interior Department is the lumber room of the government into which we put everything that we don't know how to classify, and don't know what to do with, we will put them under the Secretary of the Interior.' That is the condition of the national parks today."

Although Taft strongly supported legislation for an agency to oversee national parks, the general tenor of the times sounded a development theme rather than one of conservation.

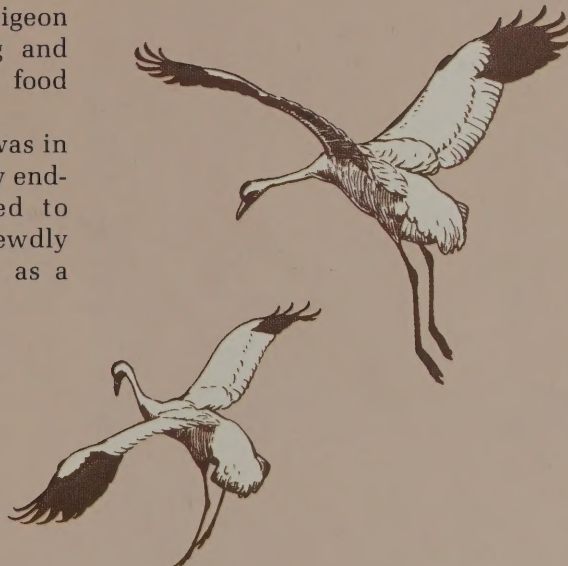
Lumbering flourished as an industry, with minimal regard for the principles and practices of sustained yield — replenishment and renewal — which Chief Forester Gifford Pinchot had so earnestly proclaimed. Even more flagrant devastation took place on privately owned forest preserves that, in the not so distant past, had been bought through the General Land Office for as little as \$1.25 per acre with no acreage limitations.

Neglect took its toll in American wildlife, too. The egret, the heron and several other plumed native types of birds were being threatened with extinction because of the demand for millinery feathers. Buffalo skin robes were also popular to keep infants snug in their buggies and parents cozy in their runabouts. The sea otters, walruses and Alaskan fur seals and foxes were among other wildlife victims of commercial exploitation without regard for future consequences.

In 1913 Senator James Reed railed at preservationists trying to save the egret and other bird species from extinction: "I really honestly want to know why there should be any sympathy or sentiment about a long-legged, long-necked bird that lives in swamps and eats tadpoles and fish and crawfish and things of that kind; why should we worry ourselves into a frenzy because a lady adorns her hat with one of its feathers, which appears to be the only use it has?"

Ironically, the Senator spoke those words the year before the last Passenger Pigeon — whose numbers once were in the multi-millions — died in a Cincinnati zoo. The pigeon was the victim of timbering and slaughter for the commercial food market.

The wilderness as a whole was in danger, even though seemingly endless expanses still remained to tantalize the many who shrewdly measured the public treasure as a quick means to private profit.





Getting and Giving Coal and Oil

Under the stimulus of the Mining Act of 1872, minerals production became a basic industry and a formidable political and economic pressure point. It was in this environment that Gifford Pinchot was ordered by President Taft to remove himself from his post as Chief of Forestry on grounds of insubordination, following a dispute with Interior Secretary Richard Ballinger. The controversy centered on water and power sites in Wyoming and Montana as well as on certain coal lands in Alaska. Publicity over the controversy led Ballinger to resign in 1911. The rift also caused disaffection within Republican ranks between Taft supporters and followers of former President Theodore Roosevelt, who championed the Pinchot principles of conservation. Roosevelt's breakaway Bull-Moose Party grew out of such disagreements.

During the Harding administration, several years later, another episode involving disposition of public mineral resources became a public scandal. The principal individual involved was Albert Fall, who served as Secretary of the Interior from 1921 to 1923. Fall was a colorful Western capitalist and owner of the famous 650,000-acre Tularosa Ranch in New Mexico. He was also a lawyer, owner of a newspaper and, for a short while, in the mining business. Above all, he was a politician, who, in his own words, knew "when to change horses," having served in the Territorial legislature as a Democrat and in the U. S. Senate as a Republican.

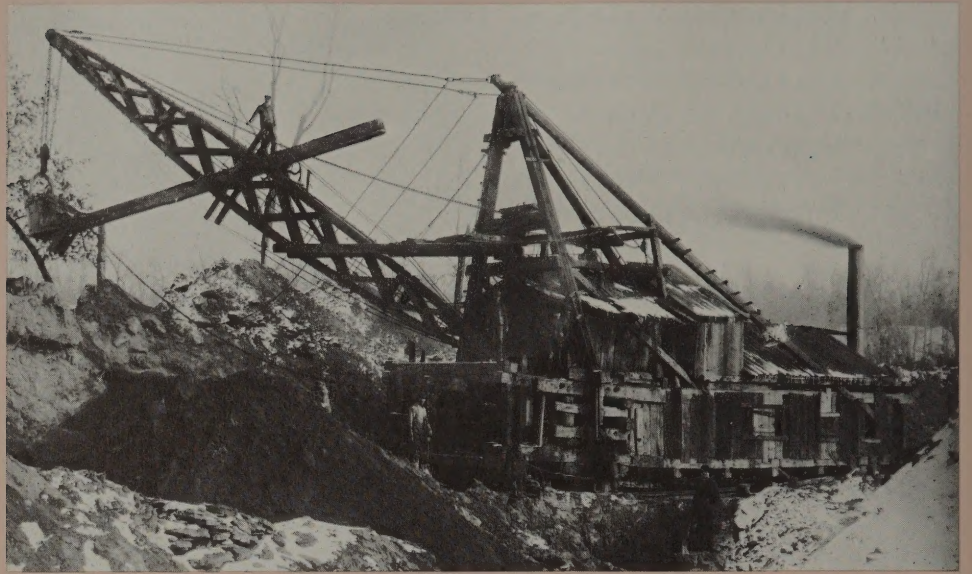
Fall's position toward public resources was succinctly expressed in his remark to a National Park Service official: "I stand for opening up every resource." When the Interior Department assumed administrative control of naval petroleum reserves, he negotiated leasing agreements for development of those reserves with two oil magnates, Harry Sinclair and Edward Doheny, the latter his friend from mining days. Leases covered naval reserves at Teapot Dome in Wyoming and Elk Hills in California. At the same time he negotiated the leasing, he borrowed money from Doheny to invest in choice breeding stock for his ranch. Fall resigned as Secretary of the Interior before an investigation commenced into the lease of the naval petroleum reserves. Later he served a prison term on a bribery conviction relating to the leasing issue.



(Opposite Page) At Titusville, Pennsylvania in the year 1859, the first oil well in the United States; and, by 1864, scenes such as Funkville, the boomtown.

(This Page) At top is Matthew Callahan of DeBeque, Colorado. He built his fireplace of oil shale. When he lit the first fire his house burned. Thus he is credited with "discovering" that shale is petroliferous. At bottom, barrels of oil from shale. The center photo shows a strip coal mining operation circa 1920.





Miners at the Bottom of the Heap

Mining coal, like making steel, had become a big industry in the 19th century. Both were looked upon as occupations where, inevitably, men would be injured and possibly killed.

Compounding the problem of lack of safety measures in the mines was the fact that most of the coal mines in the United States were manned by immigrants, who brought with them experience in mining but also the bad mining practices of 19th-century Europe.

It took a series of disasters — one of them the worst in American mining history — to focus Federal attention on health and safety in mining. On the morning of December 6, 1907, twin explosions tore through two coal mines in West Virginia, toppling buildings, caving pavements and derauling streetcars and carriages in the town of Monogah. The settled west bank of the river became a charnel house. Between 300 and 400 men were killed, although no exact count could ever be determined. Thirteen days later, more than 200 miners were killed at Jacobs Creek, Pennsylvania, and a year after that, in Marianna, Pennsylvania, another 154 miners were killed in a methane blast.

The year 1907 has the dubious distinction of having the highest recorded number of mine deaths in American mining history — about 3,000 lives lost.

Mining production by this time was big business; coal output had jumped 150 percent between 1896 and 1907. A safety revolution finally began as a result of public outcry over the massive mortality rates.

Joseph Holmes, who headed the U.S. Geological Survey's study of minerals technology, became deeply interested in the issue of mining safety in the course of his frequent visits to mining fields. He became the first Director of the Bureau of Mines when it was created in 1910 — 45 years after it had first been

proposed to Congress. Holmes started the Bureau on its double-barreled mission of research in mineral and mining science coupled with promotion of coal mine safety. Soon after, the Bureau opened its noted experimental coal mine near Pittsburgh, Pennsylvania. The first American experiments on the explosibility of coal dust began there. Holmes' demonstration eventually led to the establishment of rescue stations and first aid training for miners. However, the Bureau of Mines was powerless to inspect mines or to impose safety regulations or penalties for unsafe practices.

It was not until 1941 that sorely needed mine inspection authority was given to the Bureau. The United Mine Workers president, John L. Lewis, told Congress, "Coal is already saturated with the blood of too many men and drenched with the tears of too many surviving widows and orphans." Even then, the Bureau had no enforcement power; it could only inspect, report its findings, and make recommendations; adoption of its recommendations by private mine management was wholly voluntary. More than a quarter century passed before enforcement power was given to the Federal Government.

(Opposite Page) An 1870 steamshovel at mine site; two immigrant coal miners circa 1900; and the "breaker boys", who usually were children, picking slate and other rock fragments from the coal.





Fires, floods and cave-ins took thousands upon thousands of lives (see coal mine death count by the Bureau of Mines), and often caused subsidence of the ground under the homes where coal miners' families lived.

ALL HOPE IS GONE

FAIRMONT TIMES.

425 ARE DEAD

MOST APPALLING DISASTER IN THE HISTORY OF COAL MINES

CAUSE OF EXPLOSION MAY NEVER BE KNOWN

REMOVING OF DEAD BODIES BEGAN AT 11:20 LAST NIGHT

SCENES AROUND MINES JUST AFTER DISASTER

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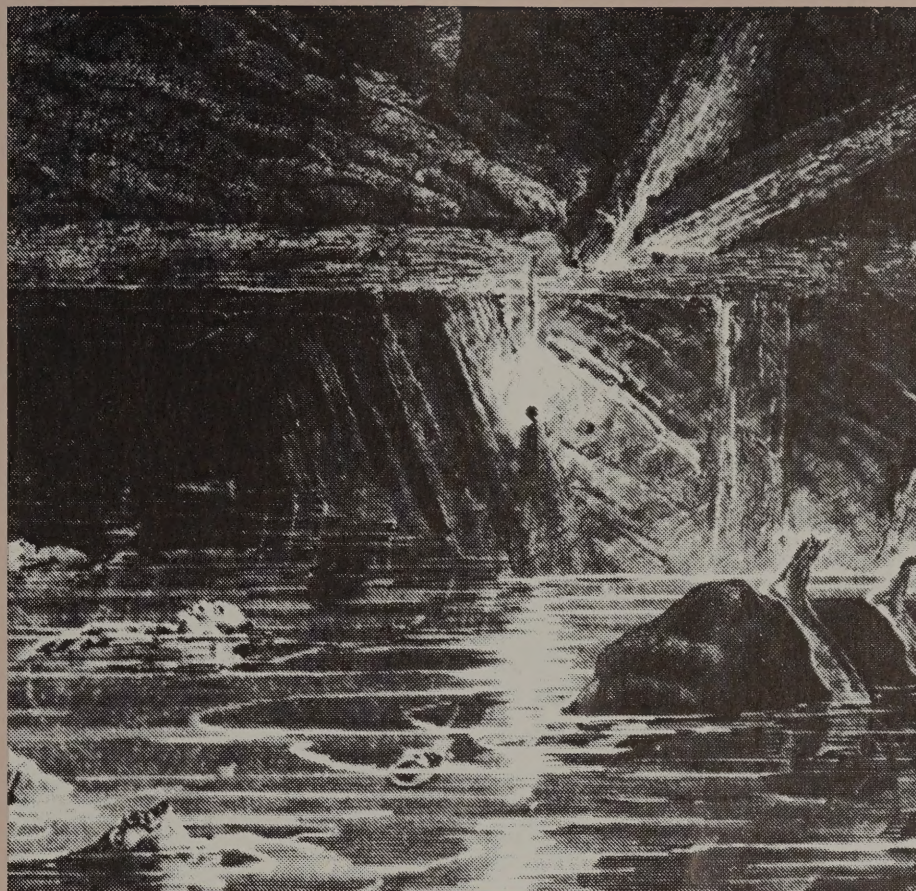
SCENES AROUND MINES JUST AFTER DISASTER

REMOVING OF DEAD BODIES BEGAN AT 11:20 LAST NIGHT

SCENES AROUND MINES JUST AFTER DISASTER

Mining Fatalities 1839-1974

1839-----40	1920----2,272
1847-----7	1921----1,995
1854-----19	1922----1,984
1855-----55	1923----2,462
1869-----179	1924----2,402
1870-----211	1925----2,234
1871-----210	1926----2,518
1872-----223	1927----2,231
1873-----263	1928----2,176
1874-----260	1929----2,187
1875-----260	1930----2,063
1876-----256	1931----1,463
1877-----244	1932----1,207
1878-----260	1933----1,064
1879-----329	1934----1,226
1880-----280	1935----1,242
1881-----416	1936----1,342
1882-----502	1937----1,413
1883-----593	1938----1,105
1884-----762	1939----1,078
1885-----574	1940----1,388
1886-----530	1941----1,266
1887-----535	1942----1,471
1888-----728	1943----1,451
1889-----668	1944----1,298
1890-----733	1945----1,068
1891-----956	1946-----968
1892-----991	1947----1,158
1893-----958	1948-----999
1894----1,142	1949-----584
1895----1,083	1950-----643
1896----1,089	1951-----785
1897-----975	1952-----548
1898----1,064	1953-----461
1899----1,216	1954-----396
1900----1,492	1955-----420
1901----1,549	1956-----448
1902----1,895	1957-----478
1903----1,752	1958-----358
1904----2,004	1959-----293
1905----2,232	1960-----325
1906----2,116	1961-----294
1907----3,197	1962-----289
1908----2,449	1963-----284
1909----2,668	1964-----242
1910----2,840	1965-----259
1911----2,719	1966-----233
1912----2,360	1967-----222
1913----2,785	1968-----311
1914----2,454	1969-----203
1915----2,269	1970-----260
1916----2,226	1971-----181
1917----2,696	1972-----156
1918----2,580	1973-----132
1919----2,323	1974-----132



Depression and Restoration

It remained for another time of troubles to revive the Nation's active interest in conservation. This time there was another Roosevelt, who came to office at a time when the national economy was at bottom. Among Franklin Roosevelt's curative attempts were several measures that promoted resources conservation in the course of creating employment.

Control on the Range

By the time Franklin D. Roosevelt took office in 1933, the Nation had an army of unemployed which numbered above 12 million — some 25 percent of the working force. It had also acquired a tremendous problem of soil erosion; the remaining topsoil of the gutted drought-ridden farms from Texas to North Dakota was rapidly being blown away. Roosevelt, always an ardent conservationist, perceived the opportunity to provide useful employment to at least a small portion of these unemployed, primarily young men, and, at the same time, mount a wholesale effort to repair the damage to the Nation's land, woods, and watercourses. As Director of National Parks, Horace Albright helped found the Civilian Conservation Corps. It consisted at various times of between 300,000 and 400,000 young men and operated until America's entrance into World War II. During its eight years it compiled an altogether remarkable record in soil and water conservation and forest protection. Thousands of miles of roads and trails were built, more than a billion trees were planted, thousands of roadside parks were created and millions of acres of land benefited from soil erosion and flood control measures. It was one of the best investments the country ever made.



The cumulative impact of the Homestead Act had contributed to the difficulties. Although the romantic concept of homesteading evokes images of wagon trains, in reality 70 percent of the homesteading was done after the advent of the automobile. The peak year was 1913 when 11 million acres of public domain were patented to homesteaders. Another two million acres were patented in the midst of the Great Depression in 1937.

The homesteader eventually pushed the cattleman out of the high-grass mid-West prairie and into the semi-arid, short-grass areas of the Rocky Mountain Plateau country. Competition was bitter for the waning grasslands, some of which could barely support two head of cattle per section per year.

Among the farmers and ranchers who suffered were the sheepherding Navajo tribesmen. They had been given starter herds in 1912 when they were returned to their lands in the Four Corners area where Arizona, New Mexico, Colorado and Utah meet. The grasslands became desert, with no range management or control of the herds, and by the 1930's the largest Indian tribe in the United States was facing starvation.

The year 1934 saw enactment of legislation to control livestock grazing on public lands. The law came after Interior Secretary Harold Ickes had adopted the public lands issue as a personal crusade, warning Congress and ranchers that he would use his withdrawal authority to close the public lands completely if grazing land management was not forthcoming. The House Public Lands Committee chairman, Edward Taylor of Colorado, was a latter-day convert to the grazing leasing principle, and he put his leadership behind the bill Ickes wanted.

The measure authorized the Secretary of the Interior to organize grazing districts in order "to regulate their occupancy and use, to preserve the land and its resources from destruction or unnecessary injury, to provide for the orderly use, improvement and development . . . and to perform such work as may be necessary to protect and rehabilitate" public grazing lands.

The Taylor Grazing Act also curtailed homesteading by providing that the Homestead Act and public land sales acts would be subject thereafter to the judgment of the Secretary of the Interior that the lands in question were suitable for the purpose stipulated in the application for patent.

(Opposite Page) Financially hard-pressed farmers were hired by the Federal Government in the 1930's to help with work on the All-American Canal to serve California's Imperial Valley.

The Navajo woman with her flock was a typical 1930's sight in New Mexico.





This 1934 legislation is a landmark in public domain history. From 1607, when the first permanent English settlement was founded in Jamestown, Virginia, until passage of the Taylor Grazing Act in 1934, American land was open for settlement and use almost solely at the initiative of the taker. Except for Alaska, whose remoteness from the main arena made it a special case to be dealt with separately, the Taylor Act ended this aspect of the frontier era.

An interesting personality was placed in charge of organizing grazing — Farrington R. Carpenter, a former student of Woodrow Wilson at Princeton University. Later, at Harvard Law School, Carpenter became acquainted with Frederick Jackson Turner, the expounder of the frontier thesis of American development. Carpenter thereby gained an understanding of the Western mind, which he put to use in meeting the challenge of regulating the public range.

He organized public meetings throughout the West to gather details about the location and users of public grazing lands. He also used local advisory boards to review applications for grazing permits, on the theory that "it is harder to lie in front of your neighbors than to a government official far removed from the scene." With the help of these committees, the Federal Range Code was written in 1938.

(This Page) Even well into the 20th Century, there were pockets of 18th Century lifestyles in rural America. Here, an Appalachian home, typical of the kind bought out by the Federal Government to consolidate Shenandoah National Park which was authorized by Congress in 1926. The Civilian Conservation Corps developed trails and markers at Shenandoah.

(Opposite Page) "High-scalers" drilling into a canyon wall 550 feet above the river during building of Hoover Dam.

The Reclamation Era

Although for nearly 30 years Federal water projects had created numerous oases throughout the West, the 1930's and 1940's may be called the Reclamation Era because of the hugeness and numbers of multi-purpose water projects that were begun. They served two fundamental purposes: They reclaimed and brought water to millions of acres of land, as well as opening new areas to agriculture, and they provided employment for millions of laborers and professionals who had been cast out of employment during the worst economic slump in the Nation's history.

The first such project came in Hoover's administration. The Department of the Interior started in the business of multi-purpose water development with the Boulder Canyon Project, during Herbert Hoover's first year as President. The desirability of a combined irrigation, electric power production and flood control system on the Nevada-Arizona border became evident following a man-made disaster on the Lower Colorado River. A private irrigation enterprise furnishing irrigation water to the Imperial Valley of Southern California had cut a bypass to some of the diversion intakes after the intakes had been silted by flash floods. A massive flood descended the Colorado River and rolled into the bypass. The Colorado changed course and poured into the Imperial Valley. This below-sea-level area partially filled to become the Salton Sea.

It became apparent that something should be done to control the Colorado and provide a reliable water supply for the Imperial Valley — but it took nearly a quarter of a century before the Boulder Project commenced. In honor of the President who had helped bring it to reality, Boulder was later renamed Hoover Dam.

The construction of Hoover Dam in Boulder Canyon foreshadowed coming events in several ways. Lake Mead, slowly filling up behind Hoover Dam, became a magnet for those seeking other forms of relaxation. Bureau of Reclamation reservoirs became oases for water recreation in the desert. For example, Lake Mead later became a National Recreation Area which the Department of the Interior administers through the National Park Service. One of the minor anomalies of life in the American West today is the sight of hundreds of boat trailers crossing the desert lands headed for Bureau of Reclamation reservoirs.

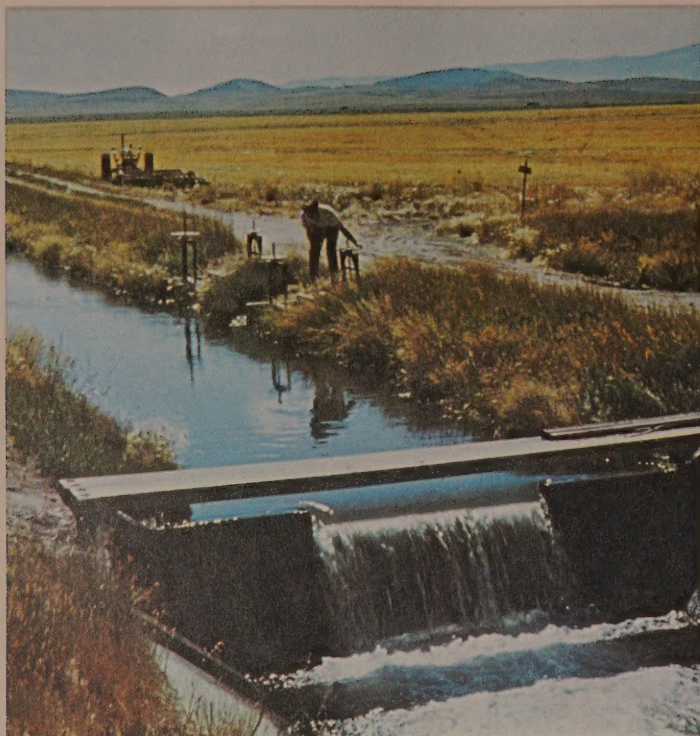
Another Reclamation project, so complex that it is still incomplete after half a century, is the Central Valley Project. The Sacramento and San Joaquin Valleys lie between the Coast Range on the west and Sierra Nevada on the east. Together they comprise the Central Valley of California, 450 miles long and 50 miles wide. The rich alluvial soils and long growing seasons gave it great agricultural promise. The chal-

lenge was to put together a system of dams and canals to move the water in some of California's rivers from north to south instead of letting the unused quantities slip out to sea through San Francisco Bay. The Central Valley Project began as a State plan in the 1920's. However, no funds were forthcoming for it until President Franklin Roosevelt made it a Federal Reclamation project and provided emergency relief funds to commence construction. Today it is a joint Federal-State effort.

Meanwhile, up in the Big Bend country of eastern Washington, along the Columbia River, the Grand Coulee Dam was in the dream stage. The grass roots heroes of the Grand Coulee were Billy Clapp, a lawyer of Ephrata, Washington; Rufus Woods, Editor of the *Wenatchee World*; and James O'Sullivan, an Ephrata contractor.

The Big Bend country was well homesteaded in the late 19th and early 20th centuries. Drought and low wheat prices after World War I took the edge off agricultural





Life grew better as water and soil conservation became part of American farm life. Views on this page are from west of the Mississippi where the Bureau of Reclamation's irrigation and hydropower projects have impacted. The two photographs on the opposite page show farm lands in the Appalachian regions before and after TVA came on the scene.

prospects. The answer to this 20th-century problem was formed back in one of the Ice Ages, when an ice dam formed across the Columbia. The water rose behind the ice and cut a new channel straight to the south. In time the ice melted and the Columbia returned to its original channel leaving the Grand Coulee a dry river bed with a dry "waterfall" as big as Niagara.

In 1918 Woods, the newspaper editor, working the outlying reaches of his circulation area, complained of lack of news. Clapp, the country lawyer, obliged him with a story. He announced a drive to turn "the Columbia River back into its old bed in Grand Coulee, by the construction of a giant dam, the reclamation of between one and two million acres . . . and the development of a water power approximating Niagara Falls."

It finally came about when Congress authorized it as a reclamation project in 1935, although not without opposition. One Member of Congress is reported to have commented: "Who is the Government going to sell all that power to? Jack-rabbits? They are the only things living out there in the woods."

Since those days, three additions have been made to the Grand Coulee transmission system, in a continuing effort to keep pace with new market demands.

In 1937 the Bonneville Power Administration was created to build transmission lines and market power from the Bonneville Dam in the State of Washington. Its function was "to encourage the widest possible use of all electric energy . . . to prevent monopolization thereof . . . to insure that the facilities for the generation of electric energy shall be operated for the benefit of the general public, and particularly of domestic and rural consumers . . ."

A self-liquidating enterprise like other public power administrations that followed it, Bonneville services Washington, Oregon, Idaho, and that portion of Montana that lies west of the Continental Divide. By 1975 it was marketing power from 27 hydro-electric plants in the Federal system, nine of them built and operated by the Bureau of Reclamation and others by the Army Corps of Engineers.

By 1943 Interior had begun marketing electric power from the Corps of Engineers to parts of Arkansas, Missouri and Oklahoma through the Southwestern Power Administration; by 1944, through a Southeastern Power Administration, it was feeding electricity into rural homes and power cooperatives throughout parts of West Virginia, Virginia, North and South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee and Kentucky.



Flood control legislation in 1944 brought the Bureau of Reclamation and the Corps of Engineers closer together in cooperative water development projects. The Missouri Basin has been a prime beneficiary, with ongoing projects to be developed cooperatively. The impact has been tremendous, inasmuch as the Missouri River Basin is the Nation's largest, covering one-sixth of the country, and running roughly congruent with the Louisiana Purchase.

But by far the most ambitious project of all was the Tennessee Valley development, administered by a quasi-independent Tennessee Valley Authority. It started as an experiment in central government planning, development and operation in what had been thought up until that time to be the preserve of the private sector. The experiment actually worked, and worked well. It transformed a whole region — its economy, the living habits of its people, its population balance, and to some extent its social structure. The entire environment of the Tennessee Valley was reconstructed as a unit in the public interest, through public planning, and TVA became a byword for regional planning throughout the world.



Renewing Cultural Heritages

Despite the woes of economic depression and involvement in World War II, the 1930's and 1940's were a time to remember for more than one good thing that happened. Along with the massive efforts put forth to replenish and restore natural resources was a companion effort to perpetuate and enhance our cultural heritage. The Civilian Conservation Corps had been created to do important work in improving public lands. The Works Progress Administration became a financial angel to artists, writers, musicians, choreographers and other Americans whose creative talents had no other financial support. A storehouse of Americana was built up in many forms, murals in public buildings, new architectural forms in housing and commercial construction, song and poetry and literature that might otherwise never have been written, and an archive of historical research that attempted to bring America's history together.

The National Park Service played a lasting role in this cultural revival. Horace Albright, its second Director, insisted the American heritage included not only landscapes and monuments but buildings and deeds of people, as well. In 1930, his efforts culminated in Congressional legislation that permitted the Park Service to acquire the first of what was to become a network of historic places in the eastern States. In 1933 an Executive Branch reorganization transferred to the National Park System over 50 historic sites from the Departments of War and Agriculture, as well as parks and memorials in the National Capital.

Private historical organizations had meanwhile been actively urging that the Federal Government assume responsibility for designating, surveying, researching and restoring archeological and other historical sites. The resulting Historic Sites Act was passed in 1935.

The same spirit that led to these activities also led to soul-searching policy reform in Indian affairs.

The Indian Reorganization Act of 1934 was the first real effort since the reign of George III to recognize the cultural and ethnic integrity of Indian tribal life. It brought a halt to the process of land allotments and provided for acquisition of additional lands by Indian tribes. Equally important, it laid the foundation for tribal economic self-containment and a measure of self-government by providing for creation of constitutional tribal governments as a basis for restoring tribal unity. The Act also made the Secretary of the Interior, as trustee of Indian lands, responsible for instituting modern conservation and resource development practices on Indian-owned areas. It paved the way for revival of tribal organization, tribal law and tribal custom, and for economic development of Indian communities.

John Collier, the Commissioner of Indian Affairs at the time, said: "It is merely a beginning in the process of liberating and rejuvenating a subjugated and exploited race living in the midst of an aggressive civilization far ahead, materially speaking, of its own."

Other steps in behalf of Indians soon followed. Federal funds were legislatively established for Indian education, an Indian Arts and Crafts Board, an Indian Extension Service to carry out a program of technical training in conservation, irrigation, grazing and dry farming, and an Indian loan fund.

Twelve years later, in 1946, the Indian Claims Commission was created by Congress to permit Indians to file suits against the Government for lands unjustly taken in earlier times.



(This Page) Women's Lib circa 1930 — a National Park Ranger.

(Opposite Page) On Easter Sunday 1939, Marion Anderson, world renowned American Negro singer, used the backdrop of the Lincoln Memorial for a concert in the Nation's Capital. The event was commemorated in this mural painted on an interior wall of the Department of the Interior. It is one of nearly 80 such murals in the building completed under a Federal program to encourage the arts in the 1930's.



The advent of World War II also changed Indian life appreciably. Nearly 70,000 Indian men and women left reservations for the first time to enter military service and defense industries. These experiences inevitably resulted in bringing new attitudes into the Indian communities, most of which were still quite isolated from neighboring non-Indian settlements. A demand rose for Indian vocational training and aid in relocating in urban areas, as well as for construction improvement projects — irrigation, roads and housing — in the reservation communities.

The modern Indian began to emerge — a citizen demanding a full share in the social and economic benefits enjoyed by the larger American society and full recognition of his right to be Indian, distinct in culture and tradition.





Up with Outdoor Recreation

Hard times accentuated the need for cost-free outdoor recreation. The National Resources Planning Board was therefore instituted in 1935 "to prepare and present to the President a program for development and use of land, waters and other national resources." A Land Planning Committee of the Board commissioned the National Park Service to undertake a study that was later published under the title, "Recreation Use of Land in the United States."

Following that report, the Park, Parkway, and Recreational Areas Study Act of June 1936 was passed, authorizing an Interior Department study of national outdoor recreation needs, with emphasis upon developing and preserving areas of unique scenic or geologic importance for public enjoyment. The study appraised the growing demand for outdoor recreation; inventoried outdoor recreation resources; analyzed the relationship between land planning and the development of outdoor recreation opportunities; attacked the difficult problems of recreation financing; established the need for interagency coordination; and traced in broad outline a national outdoor recreation plan.

Although World War II greatly slowed Federal follow-through, interest revived immediately again thereafter. Private enterprise, State and local government, and the Federal government all responded in various ways to the American people's outdoor recreation desires. Some kind of orchestrating medium was obviously needed. A Federal Interagency Recreation Committee was formed in 1946 as a starting point. Fruition of efforts came later in the 1960's.



(This Page) Lela Solomon, a Choctaw Indian, carries on the tradition of basket weaving. Indian basketry is considered by many collectors to be the finest in the world.

A group of school children are planting a tree outside their schoolbuilding. Not just any tree, but a tree signifying their support of Johnny Horizon, the Interior Department symbol of keeping tidy and making beautiful our recreation areas. The Johnny movement grew out of need to call public attention to the abuse sometimes heaped on areas that had been developed for everyone to enjoy.

(Opposite Page, Bottom) Third from the left in this 1936 group photo of National Park rangers and ranger naturalists is one known to his colleagues as Jerry Ford.

First Call for a Department of Natural Resources

Harold Ickes, the colorful, irritable, energetic pragmatist-visionary, the "old curmudgeon" whom Franklin Roosevelt chose as his Secretary of the Interior, was an important moving force in the evolution of the Department.

He pridefully declared, "The present Department of the Interior, which was established under an act to create a home department, is as different from the original Department founded in 1849 as the Nation of the gold rush days differs from the Nation of today."

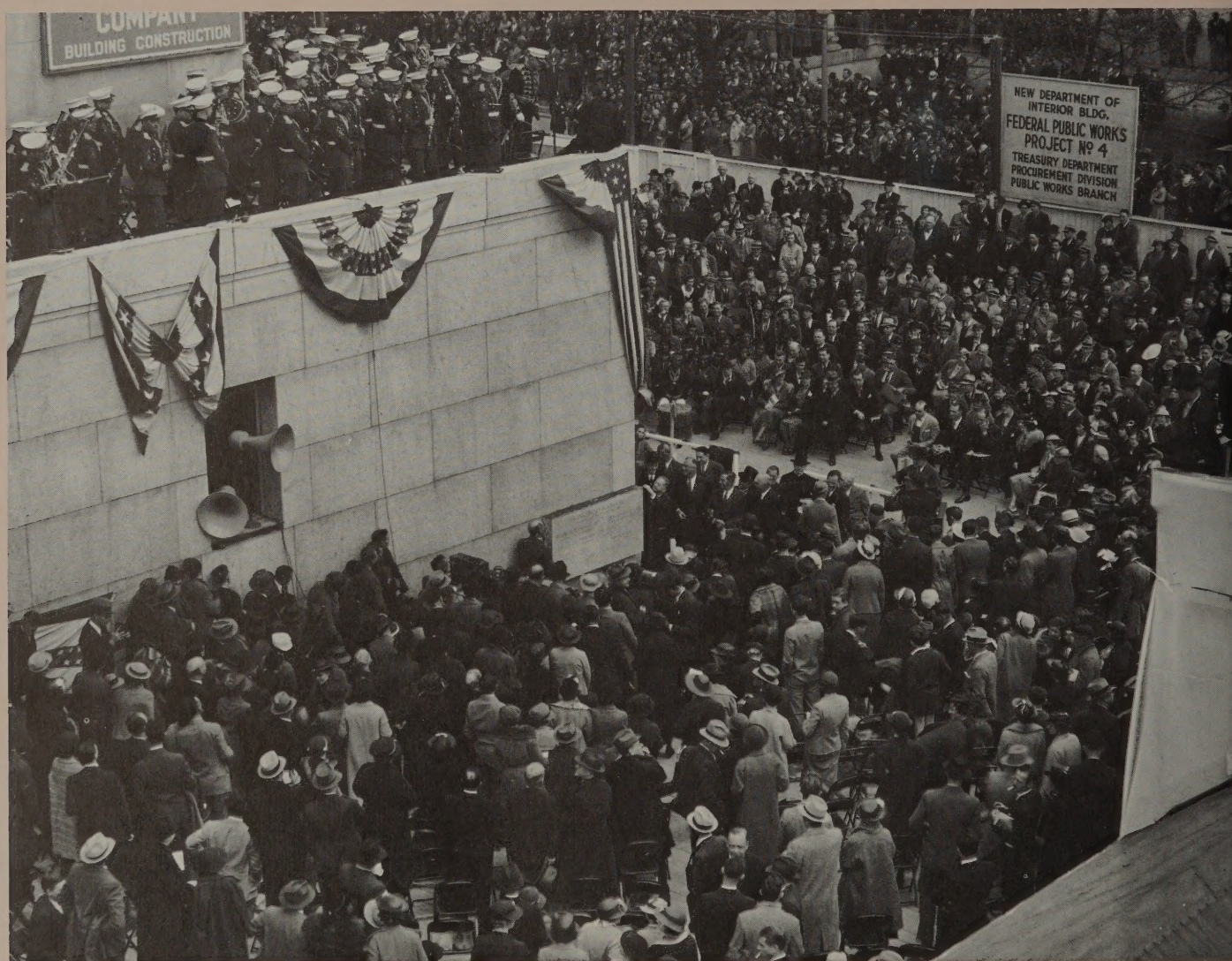
The changes had come gradually, and still more came within Ickes' term of office:

A Grazing Service was organized in the 1930's to deal with the problem of over-use of short-grass public lands; and later it was merged with the General Land Office to become, in 1946, the Bureau of Land Management, charged with responsibility for multiple, integrated use of public lands and development of minerals resources. Responsibilities for wildlife protection came early to Interior, but piecemeal at first, with such activities as international migratory bird preservation treaties; and by 1940 the Fish and Wildlife Service was constituted.

Following World War II and on into the early 1970's, the Interior Department also had responsibility for regulating oil imports under legislation to protect domestic production in an era when world oil was in abundant supply.

Many public and academic figures acknowledged this complete metamorphosis, and advocated doing something to recognize it. A Presidential commission on Government reorganization (1947-1949) — generally known as the First Hoover Commission — stopped short of recommending drastic change for Interior, although a subcommittee report of that commission had proposed creation of a Department of Natural Resources. The concept is still alive, although never implemented.

President Franklin Delano Roosevelt lays the cornerstone of the new Department of the Interior Building, completed in the 1930's.





The New Environmentalists and New Roles for Interior

Conservation efforts generally entered a state of suspended animation upon America's entrance into World War II, and when normal activity resumed it was at first fixed, as it had been in Theodore Roosevelt's time, upon the looming shortages of resources that were assumed to be in the offing. The supply sources of the Nation had indeed been badly stretched during the war, and this elicited a spate of post-war books declaiming the imminent end of just about everything people needed in the way of food, fuel and fiber.

The most memorable result of the soul-searching that ensued was the report of the President's Materials Policy Commission (the Paley Report) in 1952 entitled *Resources for Freedom*. This scholarly analysis shed a great deal of light on the Nation's resource position and made a number of recommendations to avert some of the shortage situations it foresaw in the future. By the time the report was issued, however, almost every commodity was again in plentiful supply — many in over-supply — so that the Nation concluded that, for the time being at least, it did not have to contend with the problem of material scarcity. Even when 1953 legislation authorized leasing of Outer Continental Shelf lands for oil and gas exploration, activity there was slow and sporadic for several years.

(Immediate Left) A spontaneous national movement sprang up at the turning of the 1970 decade expressive of concern for the environment. This was also the year of the first "Earth Day", and this photograph is of participants who came to Washington, D. C. from all parts of the country for the April 22, 1970 event.



Increasingly, however, we were having to contend with other problems, related not to material scarcity but to its sheer abundance. Thus the ground was laid for the mid-20th Century phase of the conservation movement, in which the concern for environmental quality came to prevail over the strict utilitarian objectives of the earlier period. Indeed, even the word "conservation" has been virtually displaced by the new "environmental protection" as the operative term describing the objective of the current effort.

This was the ghost of naturalist John Muir at work, and more. Former Fish and Wildlife Service biologist-writer Rachel Carson's *Silent Spring* (1962) set loose an avalanche of literature on the impacts of various man-made compounds upon the ecological systems of the earth.

This period produced some notable environmental achievements, such as the Wilderness Act which established the National Wilderness Preservation System in 1964; the Land and Water Conservation Fund Act providing, also in 1964, a continuing system to finance acquisition of recreation lands; the National Historic Preservation Act; and the establishment of the Bureau of Outdoor Recreation within the Interior Department.

However, most of the energy of the current phase of the environmentalist/conservationist movement has gone into the campaign for pollution abatement. A Federal Clean Air Act was passed in 1963 and amended in 1967 and 1970; and numerous States and municipalities, chiefly in the highly populated, highly industrialized regions, enacted their own laws and ordinances regulating emissions to the atmosphere. The Federal Water Pollution Control Act of 1956 was reinforced with amendments in 1961, 1965, and 1966 and supplemented by the Water Quality Improvement Act in 1970 formed the pattern for numerous similar statutes at State levels.

Nobody, however, was prepared for what happened three days after Walter J. Hickel took office as Secretary of the Interior as the year 1969 began. On January 28 crude oil from a blown-out well drilled on a lease issued by the Interior Department in the Santa Barbara Channel began to boil up from the sea floor and collect in a huge slick which floated onto the shore, instantly converting the beach front into a temporary disaster area and trapping thousands of sea birds in a gooey black mess.

The Santa Barbara incident electrified the Nation. Hickel promptly ordered a shut-down of the drilling operation, and all outer shelf leasing was suspended while newer and tighter regulations governing drilling and production were formulated by Interior. Then Congress took action: appropriations for pollution abatement were sharply increased, and new and tougher laws and regulations, particularly on pollution of waterways, were put into effect. Finally, in December 1969 came the National Environmental Policy Act which prescribed a far-reaching set of ground rules for Federal actions which "significantly affect the human environment." Then Interior's budding water pollution control efforts under its recently organized Water Pollution Control Administration were moved to a new Environmental Protection Agency created by Presidential Reorganization in 1970.

Thus the environmentalist movement which had been steadily rising throughout the Sixties, was stimulated enormously by a single incident and its aftermath. Thereafter the Nation was sensitized to all manner of stimuli on environmental matters.

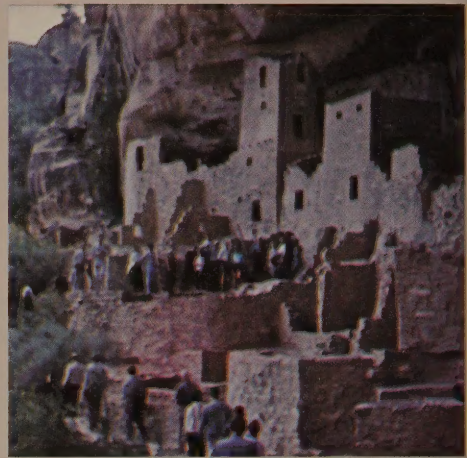
The movement to set sharp limits on economic and population growth developed in a climate of opinion and law that, for the first time in history, made it necessary for builders and developers to defend their actions. The early preservationists had to fight their battles mainly in the press, in legislative committee rooms, and in the offices of government bureaucrats, and their methods were confined chiefly to pressure and persuasion. The National Environmental Policy Act, the Clean Air Act amendments of 1970, and other Federal and State laws which permit citizen suits, gave environmentalist groups something new — access to the courts to halt what they considered runaway growth.

The Federal Government has had several bruising encounters with such groups in litigation surrounding the Alaska pipeline, Outer Continental Shelf leasing, nuclear power plant siting and licensing, application of air and water quality standards, and a large number of other actions which formerly lay unquestionably within the discretionary powers of the administrators.

The environmental movement as it took shape in the 1960's and early 1970's appears to have made a permanent imprint on the way Interior and other Federal agencies develop their programs and policies. Environmental analysis has become a major concern, frequently leading to long delays but also — as in the case of the Trans-Alaska oil pipeline — resulting in actions which are much better planned and executed.



Perspectives: At left is a 1929 aerial view of Chaco Canyon in northeastern New Mexico snapped by Ann Morrow Lindbergh when she and her aviator husband, Charles, flew over the area. At top, Chaco Canyon as seen through the infra-red eyes of an observation satellite. This photo shows that, beneath a road recently built across the area, Indian ruins lie buried beneath the drifted sands of time. The National Park Service now uses this technique to examine fragile areas and determine what, if any, development can take place without environmental damage.

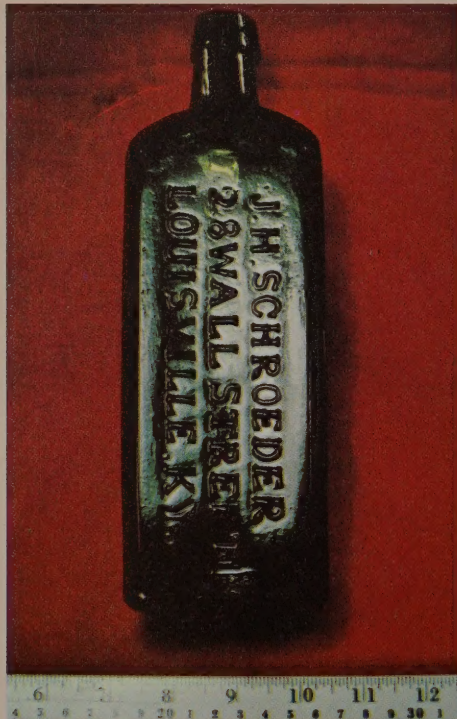


(Directly Above and Immediately Right) Interior Department archeologists uncovered the Missouri River supply boat *Bertrand* that had been used to carry goods to mining camps in the Northwest until it ran aground in 1865. From the bottles and sundries found with the vessel it appears that miners enjoyed ample liquid solace.

(Above, Top Right) Florescent fish fossil beds have been unearthed at Everglades National Park in Florida.

(Right, Center and Bottom) Painstaking study and repair of ancient Indian ruins in the Southwest is standard procedure.

(Opposite Page) Surrounded by the city of Rome, New York is the recently excavated and restored Fort Stanwix, important in both French and Indian and Revolutionary Wars. Miller of the *Rome Sentinel* photographed this work by the National Park Service.



The old "tunnel vision" approach of single-minded administrators to natural resources seems destined to be supplanted by multidiscipline techniques drawing on the social and biological sciences as well as the traditional physical sciences. The growing awareness of a finite fossil fuel supply has added still another factor to reckon with. By the mid-1970's, Interior's policy makers were seeking a course somewhere about midway between "zero growth" and the opposite extreme.

Following are highlights of Interior Department activities:

To Stretch the Shrinking Outdoors

America's love affair with technology in general and the automobile in particular bloomed into full flower during the post-World War II era. The Interstate Highway System gave millions of Americans easier access to their open spaces, and the public began loving the parks to death.

In the late 1950's the National Park Service undertook billion-dollar Mission 66 to upgrade roads, trails, campgrounds and other visitor facilities, all sadly neglected since World War II put the CCC out of business. That effort was followed by an expansion program during which more than 70 new areas were added to the National Park System. By 1975 the System included nearly 300 parks, seashores, lakeshores, national monuments and historic sites. Public use grew even faster than had been foreseen.

In 1958 Congress had created the Outdoor Recreation Resources Review Commission, in response to demands building up since the pre-War period. The Commission's 1962 report contained 52 recommendations. Among them was one that called for creation of a Bureau of Outdoor Recreation, and another calling for a Federal aid fund to acquire land and water areas for recreation.

Unremarkably, the Commission found that the greatest need for outdoor recreation was increasingly in and near cities. It developed several thrusts for the use of metropolitan governments to maintain or preserve the open space needed for outdoor recreation. It proposed an old legal device, the easement, for a new purpose, a scenic easement, whereby institutions and governments would in effect buy the open space and scenery from the landowners.

In the same year that the Commission sent its recreation report to the President, the Interior Secretary organized a Bureau of Outdoor Recreation which was reinforced by a Congressional "Organic Act" the next year. The Land and Water Conservation Fund Act of 1965 followed, authorizing matching grants to States and local communities to acquire and develop lands for recreation purposes.

Within a decade, more than \$800 million had gone to Federal agencies to purchase lands and waters of national significance, and over \$1 billion had been made available in matching grants to States and local communities. About 1.3 million acres had been added to the national system of parks, forests, wildlife refuges, wild and scenic rivers, trail and recreational areas. In addition, over a million acres were acquired by State and local agencies, benefiting 75 percent of the 3,000 or more counties throughout the United States.

A popular movement to protect wilderness areas in the national forests, parks and wildlife refuges emerged along with the outdoor recreation program. It led to adoption of the landmark Wilderness Act in 1964, locking into law what had been done by administrative fiat — the setting aside of essentially un-





spoiled areas, totaling millions of acres, to remain forever wild. Each area can be so designated only by specific Congressional action.

Additional moves to preserve the wild heritage and encourage the rugged outdoor life came with passage of the Wild and Scenic Rivers Act and the National Trails Act in 1968. Administered by the Department of the Interior, both are predicated on the urge to save what remains of primitive America for those who can enjoy it on its own terms.

But most of the parks, trails and wild rivers were still remote from the mass of urban and suburban citizens. To help balance the equation, Congress began in 1962 to purchase lands in the East and Midwest for major national park areas. Until that time, the big parks were carved out of the public domain, or donated by States or by private families. The new policy added national seashores and lakeshores to the "parks for pleasuring" concept. The mid-1970's saw a new Federal trend — the urban national park, starting with Gateway National Recreation Area in New York and Golden Gate National Recreation Area ringing San Francisco. Both were created largely from underused land already in public ownership.

Meanwhile, a White House-sponsored land beautification movement targeted on roadside eyesores. At Interior, it developed into the Johnny Horizon program to clean up the public lands, combat pollution and encourage green thumbs.

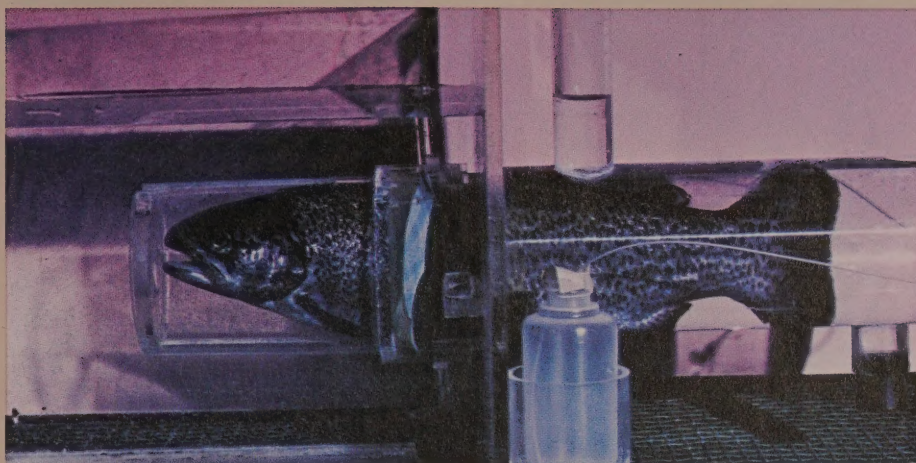
By the mid-1970's, park and public land planners were striving to prevent the destruction of essential outdoor values by experimenting with new restrictions on private cars, snowmobiles, campers and dune-buggies and reserving campground spaces and even limiting the use of some popular backwoods trails.

The demolition of priceless historic places was an outgrowth of the 1950's building boom. In 1966 Congress passed the Historic Preservation Act which set up modest aid to the States to beat the wrecker's ball, and required full consultation prior to any Federal action that threatened irreparable harm to identifiable cultural treasures.

The National Register of Historic Places encouraged the public to identify and preserve historic properties by cooperating in regional plans, donating lands, and granting easements to help save such areas for posterity.

Less dramatic but highly important were programs implemented by the Bureau of Outdoor Recreation putting new emphasis on Federal-State-local cooperation. A highly successful venture was the reexamination of thousands of acres of surplus Federal real estate to determine whether they would be better used for recreation under State or local management. In the period 1970-75, over 540 tracts totaling nearly 80,000 acres and valued at over \$200 million, were turned over by Federal agencies for recreation uses.

The technological honeymoon created other problems requiring Federal measures. For example, it proved deadly to many species of wildlife. U. S. Fish and Wildlife Service research disclosed that new persistent pesticides such as DDT were decimating certain bird populations, driving some to the brink of extinction. In addition, the massive development of former farmlands, forests and marshes was sharply diminishing native habitat for many animal species at a rate far too rapid for them to adjust. A series of laws resulted from the ensuing environmental consciousness, notably the Endangered Species Acts of 1969 and 1973, aimed at protection of animal and plant varieties both at home and abroad — at a point before they reach the level of imminent extinction.



(Opposite Page) Acquiring lands for urban parks is a long and intricate process. Two of the most ambitious undertakings to date have been the creation of National Recreation Areas in the San Francisco and New York City areas, dubbed Gateway West and Gateway East. Here, two views of some of the New York land and seascape.

(This Page) Protecting wildlife is a science as well as a sentiment. Here the Fish and Wildlife Service tests the metabolism of an ailing fish; has included the Black-footed Ferret and the Prairie Chicken on the list of endangered species along with about 400 other wild creatures; and is studying cracked bird eggs that are suspected of suffering genetic damage from DDT.

Land and Water Policies For The Modern West

As late as the 1950's and early 1960's, the remaining public domain lands in the "contiguous 48" States were widely regarded as subject to eventual disposal. But winds of change were stirring. Conservationists and Interior land administrators became acutely conscious of other, less tangible public land values: wildlife, watershed, wilderness, and open space for fast-growing Western communities.

In the mid-1960's, armed with temporary legislation, the Bureau of Land Management began a high priority effort to classify its lands for multiple use management. Public involvement in the planning was a must — not only with the traditional users but with the increasing numbers of visitors from urban areas. The BLM achieved notable success in this effort to inventory known and potential resources and to seek ways of reconciling the various competitive interests. Permanent legislation was needed, however, to make the plans work; not only an Organic Act to clarify the muddle created by thousands of public land laws that had been passed during the preceding century, but also new laws to reform the Mining Act of 1872 and to update the Mineral Leasing Act of 1920.

A test of Interior's expertise in handling a complex land-water-minerals problem was developing in the mid-1970's in the northern Great Plains, where the United States holds title to immense low-sulphur coal deposits. Some of these are on homestead land where the United States reserved mineral title. A resumption of coal leasing and development is deemed vital to help increase domestic fuel supplies. Ranchers and environmentalists alike foresee change in a way of life as well as in landscape. A massive intergovernmental planning effort under Interior leadership was under way by 1975 to resolve the conflicts.



Even more pressing by 1975 were the issues involving the Outer Continental Shelf, where an accelerated leasing program began in the early 1970's to help close the gap between rising demand and declining national production of oil and gas. The Interior Department scheduled environmental studies and potential lease sales in "frontier" areas of the Outer Continental Shelf — off Southern California, the Atlantic Seaboard, and the long, rugged coast of Alaska. Concurrently, during the 1970's, Interior developed far better safety systems and vastly more sophisticated environmental study systems to minimize the environmental risks.

The Bureau of Reclamation was deeply affected by the post-war trends. More and more, as the West urbanized, Reclamation projects pointed toward supplying hydroelectric power and municipal and industrial water. Recreation became a significant element in planning water projects, as people in the fast-growing cities turned to the big new reservoirs for swimming, boating, and fishing. Water planning on a regional scale produced the Colorado River Storage Project for the upper-basin, Rocky Mountain States; the Central Arizona Project to support the growth of that pivotal area; treaties with Canada to assure future flows of the Columbia River; a third powerplant at Grand Coulee, hugely enlarging its hydroelectric capacity; and the Central Valley Project in California's heartland. Environmental awareness of the benefits and abuses of great water projects led to changes in design — more and better fish ladders for migrating salmon, lower profile structures to fit better into the landscape, and measures to abate violent disturbances during construction. Federal and private power agencies, once ideological enemies, cooperated in big new transmission systems.

Unprecedented demands on existing water supplies had their effects in the East as well, where a short-lived but impressive drought in the 1960's led to the creation of the

Cabinet-level Water Resources Council and river basin commissions. Other outgrowths included Interior Department grants and contracts with universities and private firms for research into water problems, and the development by the Geological Survey of a nationwide network to collect data on the availability and quality of water.

(Opposite Page) Motorboating and ice fishing on Blue Mesa Lake behind the Reclamation dam in Colorado.

(This Page, Right) The Bureau of Reclamation is exploring new ways to adapt wind and solar energy, linking these sources to hydroelectric power networks. With Reclamation's huge generation and transmission network for hydropower stretching from Grand Coulee to Hoover Dam, exciting possibilities exist for tying in windpower, photovoltaic energy, solar steam-electric and solar hydrogen energy. To be really efficient, because they are intermittent suppliers of energy, wind and solar power must be linked to such a network. Energy can be stored in reservoirs above hydroelectric plants and can go on the line almost instantly when the sun is obscured or at times of heavy demand.

(Bottom) A typical irrigation diversion system, this one is in the Central Valley of California. Fish ladders are placed at each abutment so that fish can migrate to their spawning grounds.



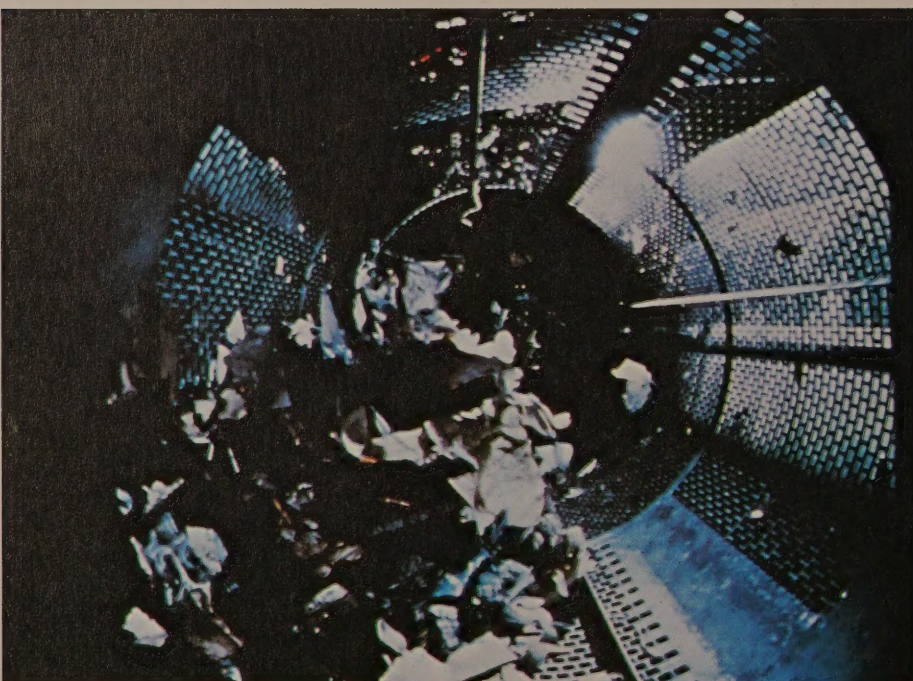
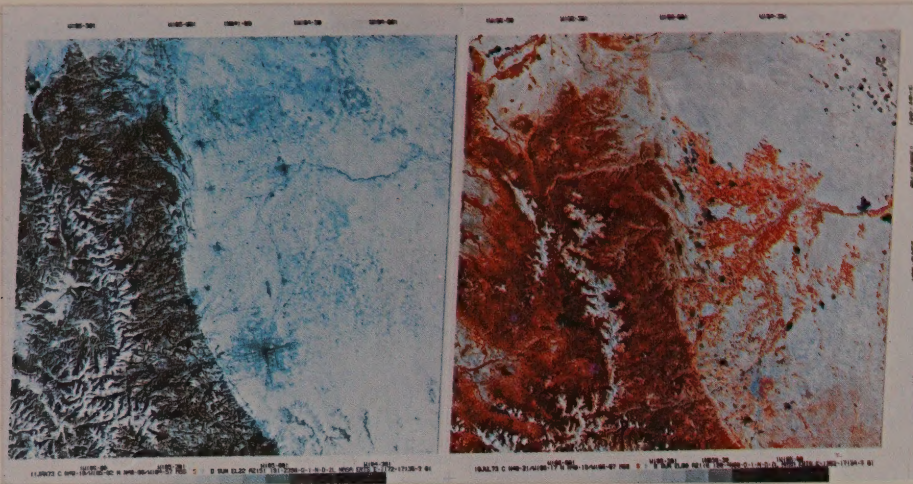
Technology to Control Technology

The Geological Survey, one of the Federal Government's venerable scientific institutions, started thinking in Space Age terms during this same period. The earth was changing rapidly under the impact of man's inventions, and the Survey's mission was to keep abreast. The Survey developed a Center of Astrogeology to support the Apollo explorations of the moon and other planets. It also manages a new Earth Resources Observation System (EROS) data center to make use of images obtained by satellite. This data provides a new dimension to man's knowledge of his own planet, revealing hitherto unsuspected conditions such as water-pollution threats and earthquake proneness. The EROS information is being used for minerals exploration, flood studies and mapping by scientists and city planners, construction engineers and naturalists.

Bureau of Mines experimentations, focusing on disposal of new mountains of solid wastes, developed a system to separate recyclable materials from incinerator trash. Other Bureau of Mines researchers, trying to protect coal miners against methane gas explosions, developed a potential new energy source — methane which can be pipelined to consumers as a substitute for natural gas, to which it is nearly identical. And American coal seams, they noted, contain methane in quantities that equal our present reserves of natural gas.

Another research project, to remove sulphur dioxide from smelter smoke, resulted in the Citrate Process, with high potential for cleansing powerplant emissions from high-sulphur coals.

These were only a few of the new technologies developed by Interior scientists and engineers seeking a better handle on technologies already in widespread use.



And What About People?

While most Americans shared in the economic and social benefits of a growing post-War economy, still some, like the country's coal and metal miners paid a price. Always a dangerous occupation, underground mining resulted in several major disasters in the 1960's. In the coal fields, it also was crippling otherwise vigorous men with the "black lung" disease — a direct outgrowth of inhaling coal dusts and gases, a special hazard when ventilation is poor.

The Federal Metal and Nonmetallic Mine Safety Act in 1966 gave the Bureau of Mines its first authority to inspect non-coal mines and enforce safety standards upon them. Three years later, the Federal Coal Mine Health and Safety Act marked a major change in the lives of thousands; providing civil and criminal penalties for violations, the Act covered health as well as safety, extended protection for miners right up to the working face, and gave the Executive Branch authority to develop and put into effect new health and safety regulations as necessary. The coal mine inspectors force was quadrupled in size, a multi-million-dollar mine health and safety research program was begun, and massive training programs were undertaken. In 1973, most of these programs were delegated to a new Mining Enforcement and Safety Administration.

(Opposite Page) Denver in Winter, Denver in summer: climatic changes and their effects on the earth's surface are measured by reading the photo messages from the Earth Resources Observation Satellite (EROS).

Friendship Park near Steubenville, Ohio, was a former mine area, restored and put to new use — an environmental lesson propounded by the Bureau of Mines and the Bureau of Outdoor Recreation.

Trash-mashing for the town — a system to separate and recycle waste solids, developed by Bureau of Mines research.



(This Page) The dramatic photo at top illustrates the sophistication of mining safety technology. This is part of a drill rig used during mine emergency operations by the Mining Enforcement and Safety Administration. *(Below)* Modern machinery for working in mines where the coal seam is so thin the miner cannot stand upright to extract it.

In an ironic way, technology was largely responsible for the most comprehensive and widely acclaimed settlement ever made by the United States with the Indian and Eskimo Natives. The scene was Alaska, and the motive was petroleum development. Discovery of a huge oil and gas field at Prudhoe Bay beside the Arctic prompted determined protests by Indian and Eskimo groups which claimed the land, and most of Alaska, as their own. In the century since Alaska was purchased from Russia, Congress had never come to grips with what parts of the land rightfully belonged to the Alaska Natives and what belonged to the State and Federal Governments. Pressure to develop the oil and build a pipeline free of long-running legal strife led to the Alaska Native Claims Settlement Act of 1971, which gave the Natives the right to choose more than 40 million acres, including mineral rights, for their present and future needs, plus a cash settlement of \$962.5 million, payable over a period of years.

The same law also gave conservationists an opportunity without precedent — a provision directing the Secretary of the Interior to set aside up to 80 million acres of Federal lands in Alaska for recommendation to Congress of new national parks, forests, wildlife refuges and wild and scenic rivers.

An oil pipeline corridor was also sanctioned following a massive environmental impact study and the imposition of stringent environmental controls within the terms of the lease. By 1974 gas pipelines were also under study.

Thus, in many ways Alaska in the 1960's and 1970's was both a frontier and a focus of competing forces in search of environmental-economic equilibrium.

Equilibrium in Indian affairs generally, however, was still short of attainment at the mid-1970's.



Possibly the most complex issue relates to Indian water rights claims in the water-scarce western half of the United States. Others pertain to land claims, hunting and fishing rights, criminal and civil jurisdiction on reservations, and the demands of urban Indians to share in the services and benefits provided through the Bureau of Indian Affairs.

A new approach to Federal Indian policy, rather sweepingly termed "self-determination," was first

enunciated by President Lyndon B. Johnson in 1968. The term was generally understood to constitute a reversal of the "termination" policy of the 1950's which ended the special relationship of the Government with the Menominees of Wisconsin and a number of smaller tribal groups. For the Menominees, whose reservation comprised a county-sized bloc of land in the northern part of Wisconsin, termination brought tax burdens and administrative responsibilities

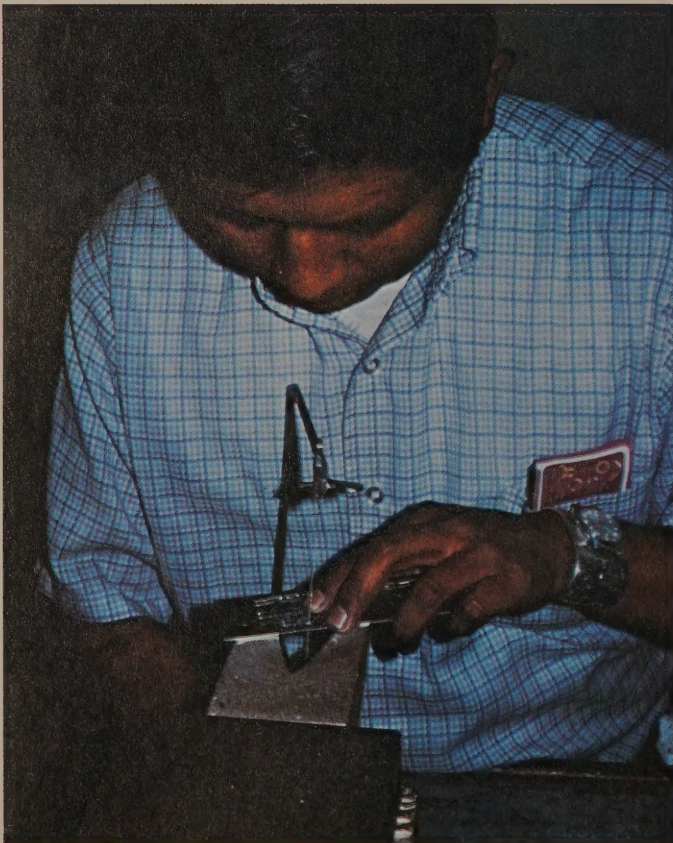
that led the tribe into dire economic circumstances. After years of legislative effort, including petition from the Wisconsin legislature, the Menominee Restoration Act was passed in 1973 to give them back their former status within the BIA fold.

The "self-determination" concept grew in the early 1970's. One of the earliest and most complete Indian takeovers of governmental affairs, under contract with the BIA, was ac-

(Opposite Page) Although fascinating wildlife still abounds, and refuges are part of the Alaska scene, some changes are inevitable. Sitka is shown as it was around the time Alaska was purchased from Russia.

(Below) The port of Valdez today, situated on the Gulf of Alaska and the destination point of oil to be piped from the North Slope and shipped out of Alaska on tankers.





complished on the Zuni Reservation in New Mexico. However, many tribes continued to be reluctant to move on a large scale away from the traditional relationship with the Government.

The enactment in early 1975 of the Indian Self-Determination and Education Assistance Act is expected to have a major, long-term impact by clarifying the self-determination concept, reducing governmental constraints and stressing the role of official tribal governing bodies in the administration of reservation affairs.

In addition, Indian tribes are benefiting from sizable outlays from other Federal agencies, including small business and community development planning assistance, as well as special health and education aid. About 15,000 Indian students received higher education assistance in 1975 alone.

Another impressive source of financial increment to Indian tribes has come through actions of the Indian Claims Commission. It was constituted in 1946 to adjudicate claims by Indian tribes against the United States, primarily for lands taken without adequate compensation from the tribes in earlier times. By mid-year 1975 a total of 438 such claims had been judicially processed, and 250 awards had been made for a total of approximately a half billion dollars, with another 176 claims actions still pending.

Least visible among all the people under the American flag are those in the oceanic territories, which the Interior Department oversees. Until about 1960, for the most part, they were left largely to their own limited economic resources. By 1975 many dramatic changes had taken place.

The Virgin Islands underwent a huge boom in tourism and industrial growth. Like the mainland, the islands paid a price in environmental change. So did Guam, a major naval base and more recently a magnet for tourists from Japan and elsewhere. Both territories have coped well with the challenge and made significant strides toward self-government; Guam and the Virgin Islands began electing their own governors in 1970 and have virtually complete control over their internal affairs.

(Opposite Page) Indians and Alaskan Natives take part in the world around them, often operating their own businesses, but cultural tradition, as exemplified in the carved totem, remain strong.

(This Page) Charlotte Amalie, port of call to tourists of the world, is on St. Thomas Island, the largest of the U.S. Virgin Islands, situated in the Caribbean. These islands were purchased from Denmark in 1917.

Guam in the far Pacific, today a modern air and sea traffic point, is shown here during the time of Spanish rule, which began in 1521 when Ferdinand Magellan "discovered" it and other islands of the chain called the Marianas. The U.S. acquired Guam at the close of the Spanish-American War.





The people of American Samoa, less impacted by tourism and more traditionalist in their social structure, turned down three opportunities to elect their own governor, but each time by a narrower margin. Still, economic opportunity, health and sanitation have progressed, and education has registered major gains.

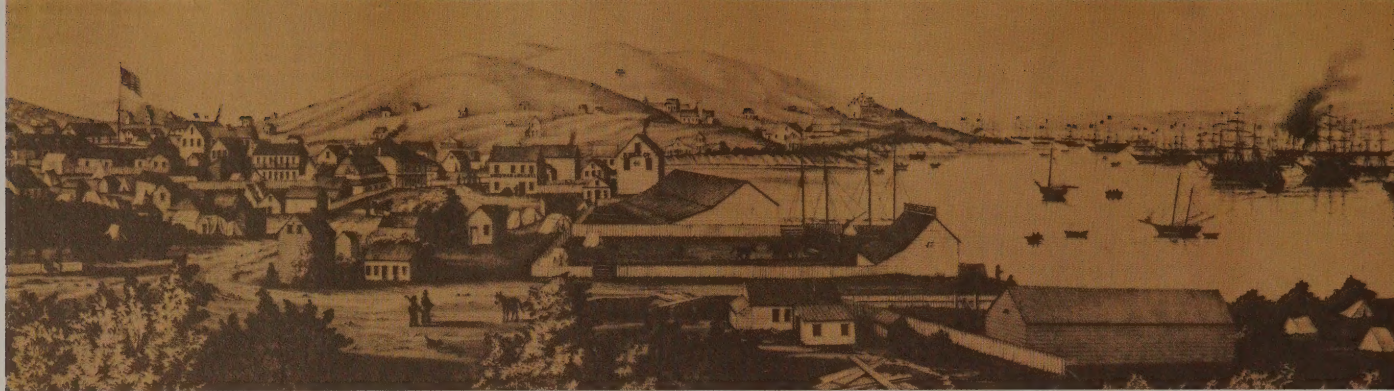
In the U. N.-Mandated Trust Territory of the Pacific Islands, taken from Japan during World War II, American aid has multiplied several times over the past decade or two. Big public works projects have improved schools, roads and harbors; an elected Congress of Micronesia has been negotiating "with United States officials for a "free association" form of commonwealth status similar to that of Puerto Rico. At the same time the people of the Northern Marianas Islands — that part of the Trust Territory closest to Guam in both mileage and culture — opted by plebiscite in 1975 for a closer, more permanent association with the mainland United States.

In retrospect, the 1960's and early 1970's may be regarded as a turning point for the Interior Department in administration of Indian and Territorial affairs as well as in public resources management. Policies were still evolving to accommodate to the changing socio-economic profile of a Nation approaching its 200th year.

The sea is a main source of livelihood for Micronesians. Samoans, too, are people of the sea, although local foods such as coconuts provide a variety of good eating for these South Pacific islanders.

SAN FRANCISCO
A City Of Spine And Splendor





San Francisco was born beautiful, with all the elements for romantic fascination: dazzling geography, a gentle but moody climate — and beneath it all, an awesome unseen danger. The city's 200-year story abounds with adventure and surprise.

Spanish explorers found this place and Spanish missionaries gave it a name. In 1769 Gaspar de Portola and his men first saw the bay from the high hills between it and the Pacific Ocean. And in 1776, just a few months before a band of patriots in Philadelphia, three thousand miles to the east, declared independence from England, a Spanish priest and a Spanish soldier came to found a settlement by the bay. On the northern shore of the peninsula of San Francisco, where bay and ocean meet, the soldier established the Presidio of San Francisco. To the southeast, the priest founded the Mission of San Francisco de Assisi.

The peninsula itself came to be called "Yerba Buena," meaning "good herb." It was a finger of land, lapped on three sides by Pacific and Bay waters, and stippled by 43 hills that offered panoramic views of an island studded bay. Coastal shores were golden then, cloaked by sprawling fields of flowering California poppy.

The tiny town slumbered some three-fourths of a century. Then, gold was discovered in the Sierra and within two years, the population of the City of St. Francis jumped from 900 to 56,000.

Beautiful though she was to the eye, San Francisco was a physical challenge to those who would civilize her. Most hills were steep and difficult to climb, while waters were tide-tossed and perilous to cross. Fortunately, her bold pioneers were equal to the challenge. Inventor Andrew Hallidie solved the problem of heights by installing an underground cable, gripped by a car capable of transporting passengers up any slope. The cable car began running in 1873. It still runs today — as a San Francisco trademark, and a rolling National Historic Landmark.



(Opposite Page Top) San Francisco in 1849,
one year after the discovery of gold.

(Opposite Page Bottom) The Golden Gate,
as seen from Telegraph Hill, 1873.

(Below) Flower stands have been part of the San
Francisco scene for almost as long as the city's circa 1873 cable cars.





A second trademark resulted from the dreams of engineer Joseph Strauss. In 1917 Strauss surveyed a mile-wide watery span, plied then only by ocean-going vessels and ferries. For the next 16 years he fought for the right and dollars to raise a bridge everyone said couldn't be built. Thirty-five million dollars and 80,000 miles of wire cable later, in 1937, the ribbon to the Golden Gate Bridge was cut.

Bountiful though she had been, it became clear in 1906 that Nature had gifted San Francisco with mixed blessings. On April 18 of that year a monumental earthquake followed by catastrophic fires flattened the city and introduced to the world one grim reality. San Francisco perches on the brink of the San Andreas Fault, recognized by geologists as one of the world's most hazardous. At the earth's whim — at any moment — one gigantic lurch along this fault could again destroy the city.

(*Opposite Page*) First the earthquake (1906),
then the Golden Gate Bridge (1937).

(*Below*) Golden Gate Park, an oasis of green in the
heart of the western sector of the city.
Green area upper left is the Presidio.

But San Franciscans rebuilt and, in 1915, staged the Panama-Pacific International Exposition to commemorate reconstruction and to show the world they had the spirit to begin again. The golden city also matured into the financial center of the West, and the financial conduit between America and the Far East.

Scientific approaches to land-use planning came late in San Francisco's growth, but the everpresent possibility of another earthquake has of late caused officials and developers to heed geologists' warnings.

San Francisco today is a cosmopolitan city in which to live and to visit. Her nearly 700,000 residents include 100,000 Chinese-Americans, as many blacks, with a lesser number of people of Japanese, Russian, Italian, Greek, Mexican and Filipino origin. The resulting distinct ethnic communities offer unique cultural insights and experiences.

Modern-day San Francisco abounds in paradoxes. Although its history contains episodes of vigilante violence and oppression of immigrants in earlier days, it is also a city that welcomes diversity of belief and ideas. It is a city of high culture and also the place where the counter-culture of the 1960's first focused. Its neighborhoods take pride in their Victorian nostalgia, almost in the shadow of striking new contemporary skyscrapers. It has its share of blight, like other modern cities the world over, yet it is also a city of magnificent parks, the most famous of which is Golden Gate, reclaimed from barren sand dunes by stubborn planting and replanting.

However, San Francisco, like other cities everywhere, is facing the fact that its scenic glories are finite. It is running out of space to grow outward and has no further room to grow except upward, piling skyscrapers and people atop the fragile hillsides.

A tradition of regard for the lovely environment began a long time ago and environmental concerns dominate the native San Franciscan's thinking. In 1892 John Muir of San Francisco founded the Sierra Club, and three-quarters of a century later the Friends of the Earth came into being with headquarters in San Francisco.

In 1970, with civilization nibbling away huge chunks of urban land, Bay Area residents formed a grass roots group, People for Golden Gate National Recreation Area, and in 1972 the Golden Gate National Recreation Area became a reality by an Act of Congress.



(Below Top) The old residences which gaze gothically over Alamo Square appear to have turned their backs on the 20th century with Victorian disapproval.

(Below Bottom) Lombard Street.

All color photographs of San Francisco were provided by the San Francisco Convention and Tourist's Bureau.

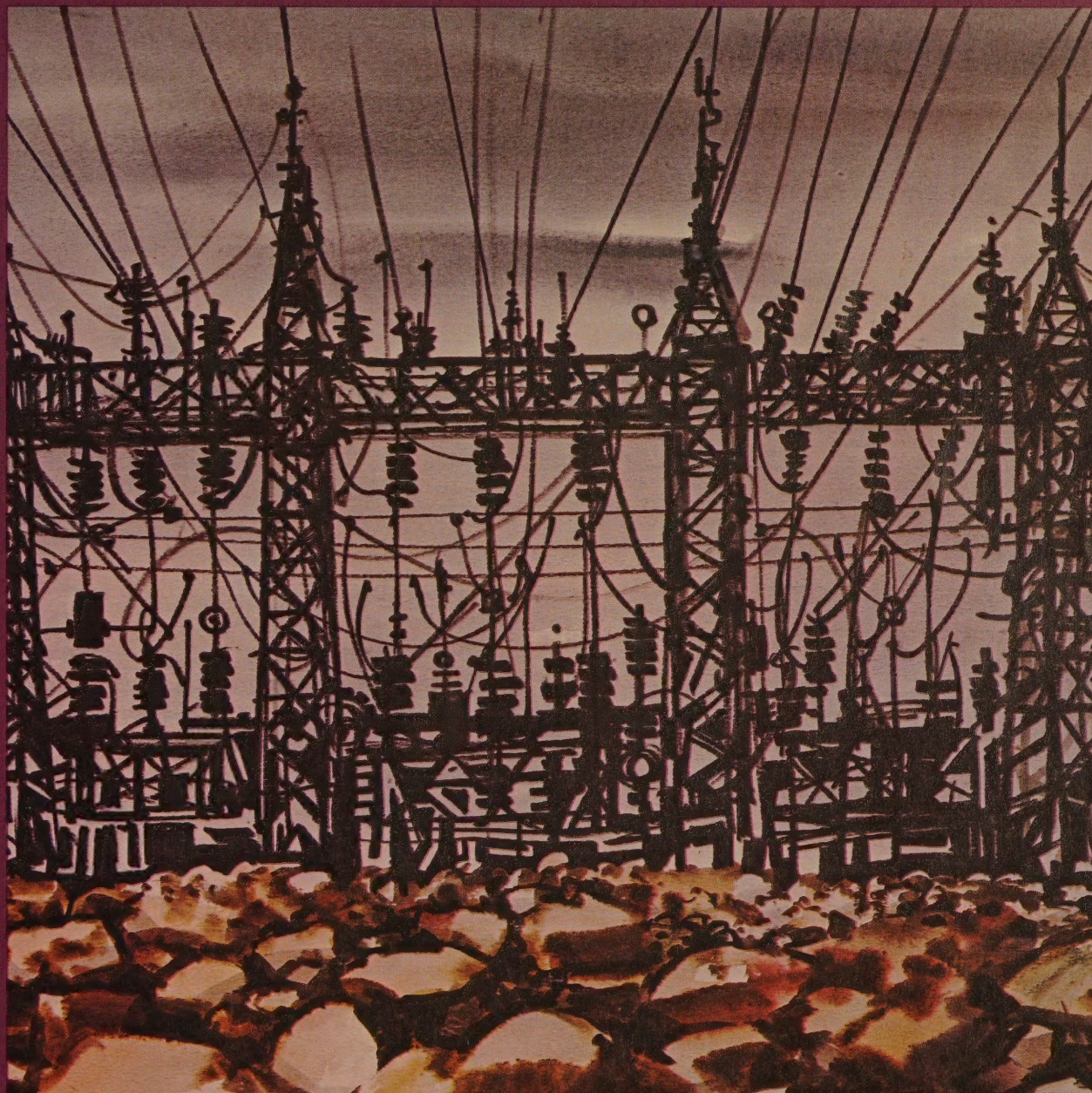


Today, it ranks as one of the major urban parks in the Nation, protecting more than 34,000 acres of coastland, marshes, mountains, forests, islands and beaches. Included in its borders, all within a short drive or boat ride from the city, are Alcatraz, a former island penitentiary; Fort Point, a turreted brick bastion dating from 1861; and Muir Woods, one of the world's finest stands of virgin redwoods.

While residents in the North Bay fought to preserve land, those in the South worked to save wildlife. Since 1909, the Farallon Islands, 28 miles off San Francisco's shore, had served as a wildlife refuge, protecting a quarter million sea birds per year. Meanwhile, shorebirds were left to fend for themselves. When residents learned that San Francisco Bay serves as winter grounds for 90 percent of Pacific migratory shorebirds, they sought the legislative support that resulted, in 1973, in designation of 23,000 acres of South San Francisco Bay as a National U. S. Fish and Wildlife Refuge.

In the face of a population explosion and symptoms of urban sprawl, San Francisco maintains its stature among the cities of the world because of its efforts to preserve both tradition and scenic integrity. Fittingly, it was chosen as the meeting place where the United Nations was conceived and born. Yet, for all its being truly a city of the world, its bold individuality stamps it as uniquely an American product, possessing elements of all the influences that have combined to bring the United States to its 200th year.

Seventy Thousand Days Ahead





" . . . You are going to become a part of a subtle, slowly rising, gentle revolution . . . This gentle revolution will require every skill you have learned . . . plus all your imagination and intelligence. In the past, revolutions have been bloody and have nearly always been followed by reaction . . . Not so with the gentle revolution . . . If we consistently and deliberately put ourselves on the side of life . . . if we protect and nurture trees, plants, animals, the fish in the sea . . . the door is open."

May Sarton
Commencement Address
Clark University 1975

Whatever concerns Americans may have had at the birthing of the Republic and in the year marking its Centennial, the problem of closed boundaries was not among them. In 1776 the issue before the new Nation was to secure its sovereignty over the land it had claimed as its own. A hundred years later, the tasks of building and settling a greatly expanded domain were in full swing, and everywhere the look of the land was one of exuberant, tumultuous growth.

Now, in 1976, America is faced with the challenge of accommodating its growth to the practical limits of resources that can be made available to its people: land, water, minerals, energy, food, and fiber. The day of the open frontier is gone, and gone with it is the notion of an inexhaustible patrimony of nature which governed the outlook of Americans since before the beginning of the Republic.

The arguments which link the threats to environmental quality with those of resource exhaustion are probably nowhere better expressed than in the much talked-about study done by Dennis Meadows and his associates for the Club of Rome published in 1972 as *The Limits to Growth*. The study postulates a number of situations in which assumed rates of growth approximating those of recent history are analyzed for their effect upon the carrying capacity of the earth. The central finding is that no matter how the variable elements are manipulated, the invariable outcome is one of catastrophe for the human community within the next one or two hundred years.

Summing up, at this point in its evolution, the environmentalist movement embodies both an enduring concern for the quality of the natural estate and a rising apprehension over the continued availability of resources.

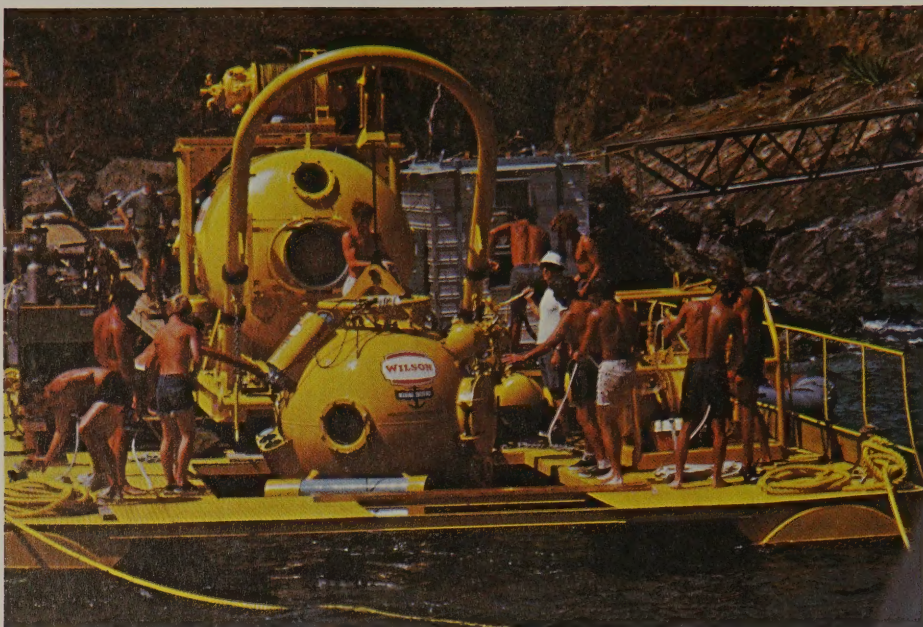
A mature, settled nation must now contend with the increasingly difficult task of supplying the resources it needs and also with the impact of wastes resulting from their production and use. Moreover, within a population that is 70 percent urban there has developed a body of sentiment which holds that natural beauty is important, and ought to be preserved; that the tranquility and solitude of the world of nature are needed by people who have little enough of it in their daily lives; and that man needs the opportunity to remind himself occasionally that he is kin to every living thing, closely or remotely. Meeting the needs of a growing population within a quality environment from sources of finite dimensions thus constitutes America's great resource challenge as the Nation enters its third century.

The new perspective comes as the denouement to a quarter century of almost uninterrupted growth and economic expansion which brought with it an unprecedented degree of affluence. The population increased by nearly 50 percent between 1945 and 1970, and the number of dwellings almost doubled. The number of automobiles rose from 27 million to 90 million in the same period, and real per capita disposable income increased by 60 percent. In 1970, 24 percent of all families had incomes of more than \$15,000. Yet only 15 years before, less than 5 percent of all families had incomes of more than \$15,000, and more than 33 percent had incomes of less than \$5,000 — using the same 1970 dollars as a measure. Economic growth had done that much for that many people in 15 years.



(Cover) Switchyard at Yellowtail Dam, Montana, from the Bureau of Reclamation collection.

(Opposite Page) Underseas geologic explorations probe the mysteries of the ocean floor in hope of unfolding more of Earth's secrets.



(Top) A pilot project in the early 1970's, sponsored by the Interior and Navy Departments in the Virgin Islands, attempted to determine the ability of man to live in a submerged habitat. Some of the data gathered may prove important for mankind's future, if crowding and pollution continue to increase.

(Below) Environmental negatives.

The long period of affluent living and economic security worked some profound changes upon both the activities and the outlook of the American people. Americans had been irregularly but consistently enhancing their material well-being for the past hundred years or so, but nothing in all our history compares even remotely with the prosperity we have enjoyed since the close of the Second World War, which became visibly evident by the mid-1950's.

Television aerials sprouted from millions of roof tops. Air-conditioned houses and air-conditioned automobiles became the common expectation among purchasers. By 1970 one out of every three families owned a second car, and second homes had ceased to be curiosities. Ten-acre shopping centers, their stores stuffed with merchandise, sprouted everywhere, and households became stocked with every device imaginable to make life more comfortable and enjoyable for their occupants.

The mobility of the automobile in combination with the 40-hour week, the paid vacation, and a steadily rising disposable income created an enormous demand for leisure-related industries, and there followed an explosion of marinas, ski resorts, vacation cottages, camp sites, and seaside condominiums. Boats, motorcycles, campers, and off-the-road vehicles proliferated by the millions. Air travel increased by a factor of 40, an elaborate system of high-speed public roads made it possible for a family to cover 5,000 miles in a two-week vacation, and millions of them did. By the mid-1960's, every part of the country was within reach of the average American family, and those parts which lay outside the family's immediate vistas of experience were brought to it gratuitously — and often in color — by the ubiquitous television.

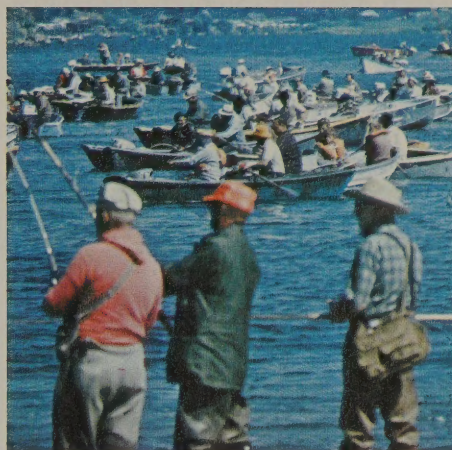
The Environmental Negative Of Affluence

The impacts of the surge of economic expansion and the affluence it generated are now painfully evident. The national parks have been inundated by floods of visitors which threaten to destroy the unique values which led to the creation of the parks in the first place. Development of seashore communities threatens wetlands by landfills and diversion of the natural flow of tidal streams. Off-the-road vehicle traffic contributes to erosion and the destruction of plant life on deserts and beaches. Acrimonious conflicts over the uses of land and water have arisen out of the competing demands for grazing, mining, irrigation, oil and gas production, hydroelectric power development, wildlife habitat, wilderness preservation, commercial fishing, timber harvesting, and recreational activities. Mountains of municipal waste and acres of rusting automobile hulks disfigure the countryside. Depletion of mineral resources has proceeded to a point where the Nation is now heavily dependent upon other countries for many of its most commonly used minerals, and dangerously so in the case of petroleum.

The impact of our prosperity is nowhere more evident than in our parks and recreation areas. Visits to the national parks have expanded a hundred times as fast as the population since 1945. In that year the national parks received 4.5 million visitors. By 1955 the total had jumped to 50 million, and it more than doubled over the next 10 years to 112 million. By 1975 it had reached 240 million — more than the total population of the country. Most of these visits occurred in the five months between May and September. Visits to State parks expanded on an even larger scale, and in 1975 exceeded 500 million.

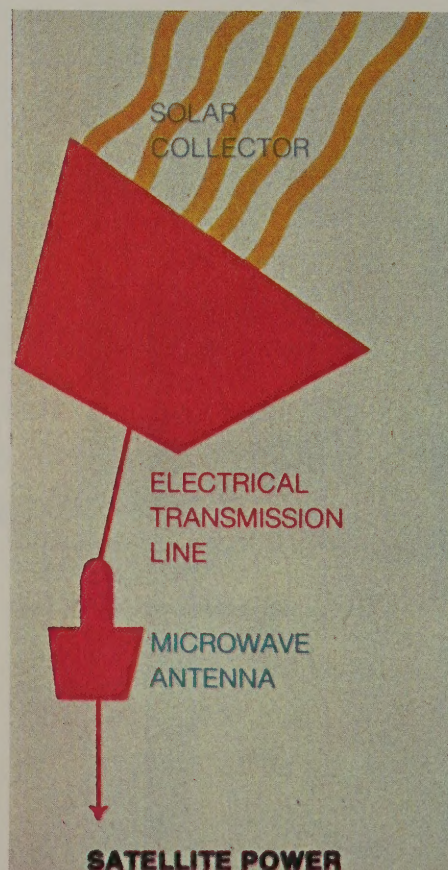
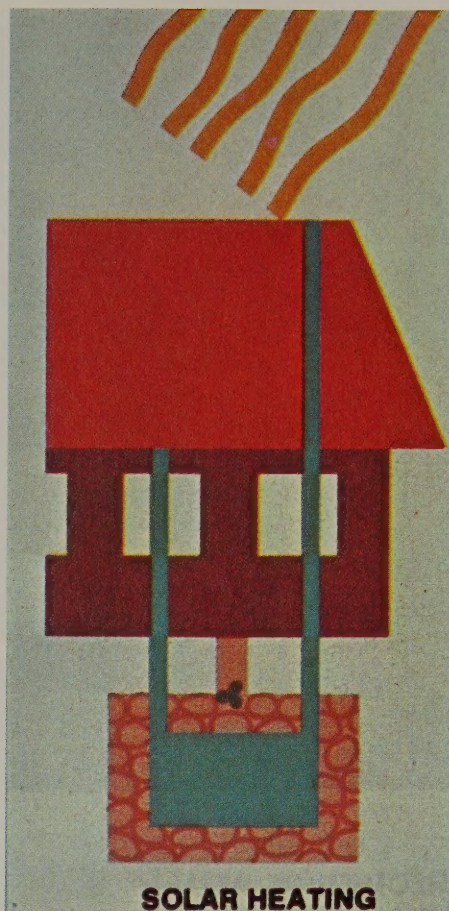
But while demand for recreational areas soared, the availability of attractive, unique, or scenic areas to accommodate it was limited both by nature and by the circumstances of ownership.

Increasingly, the provision of additional park and recreational areas involves the repurchase of land originally in the public domain. Over the past decade the Land and Water Conservation Fund has been acquiring lands for this purpose, and is now spending \$300 million a year — three times the total amount spent to acquire the public lands in their original state. Rising revenues from Outer Continental Shelf leasing feeds the Fund in part, as do sales of Golden Eagle season passports to many National Park facilities. It is ironic that in the year of the Nation's Centennial, land was so plentiful it was being given away, only to be bought back a hundred years later at prices that would boggle the minds of the original grantees.



The crowding that has become characteristic of the Nation's inland recreational areas is equally noticeable at beaches, bays, and estuaries, and the heavy development of wetlands and other habitats essential to wildlife has imperiled breeding and rest areas. Moreover, the inroads made on fish and wildlife population by toxic herbicides and pesticides entering the Nation's ecosystem have created long-term problems which demand solutions obtainable only through concerted programs of research.

In consequence, the U. S. Fish and Wildlife Service, which historically was concerned principally with regulating the hunting of migratory waterfowl and the stocking of game fish in waters on Federal lands, has undertaken a broad program to protect and restore endangered and threatened species of wildlife, in close coordination with private groups and other public agencies, both at home and abroad. This effort has met with some interesting success in recent years. Atlantic salmon have been restored to the Connecticut River in a wild state for the first time in more than a century, and peregrine falcons, extinct in the eastern states for decades, are the subject of similar restoration efforts. Whooping cranes, bred in captivity, constitute a gene pool intended eventually to strengthen the survival chances for the one small wild flock in existence, and a new effort to form an additional wild flock in Idaho is now underway. Three species of California trout were removed in 1975 from the endangered species list, only one example of the rebuilding of a viable population. These are selected instances among many of the efforts being made to assure the survival of creatures crowded out of their living space, in part by the explosion of human recreational and construction activity, in part by the proliferation of dams and other water control projects, and in part by the widespread use of pesticides in commercial agriculture.



The Energy Negative of Expansion

The costs of this abundance are beginning to show as well. To supply and service our prolonged experiment in gracious living, a vast infrastructure of mines, farms, power plants, factories, trucklines, railroads, and airlines must work incessantly, and they all have one thing in common: they all consume energy, and consume it in enormous and steadily increasing amounts.

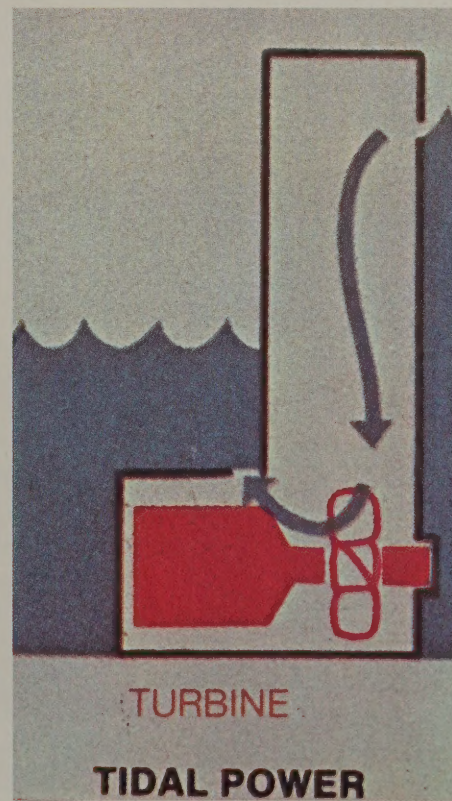
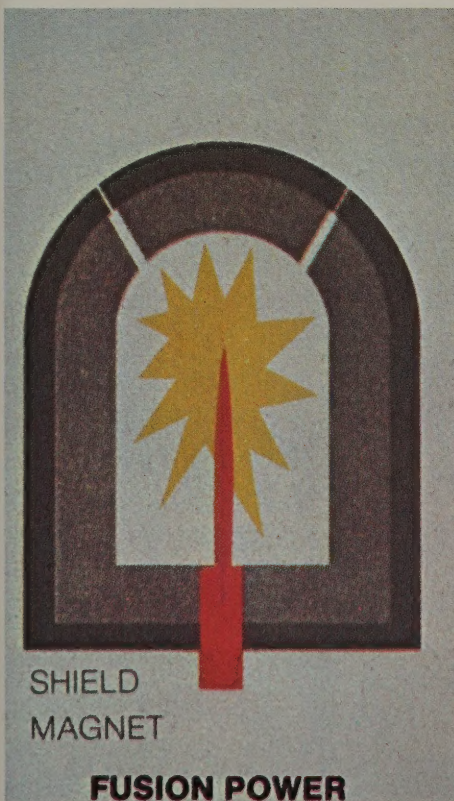
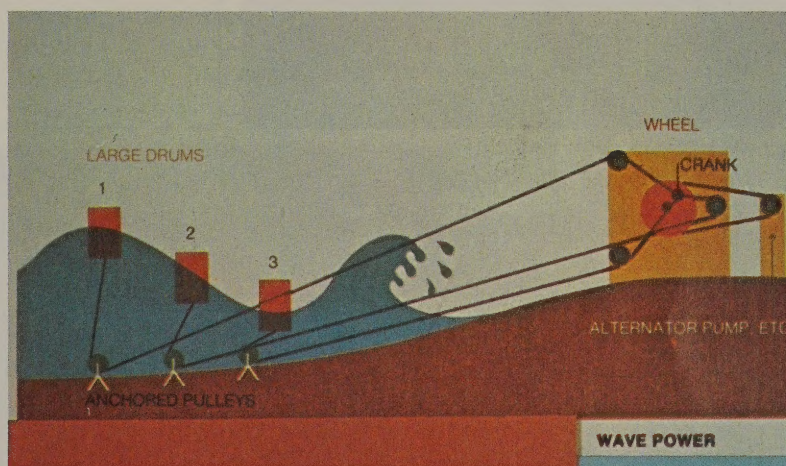
Since 1945, energy consumption has more than doubled, and during these three decades the United States alone has consumed more energy than all the people of all the world had used until that time. In overwhelming measure this energy has been provided by fossil fuels — the stored solar energy of hundreds of millions of years — released by burning coal, oil, and natural gas to perform useful tasks, then to escape forever into space from whence it came, in forms no longer useable by man for energy.

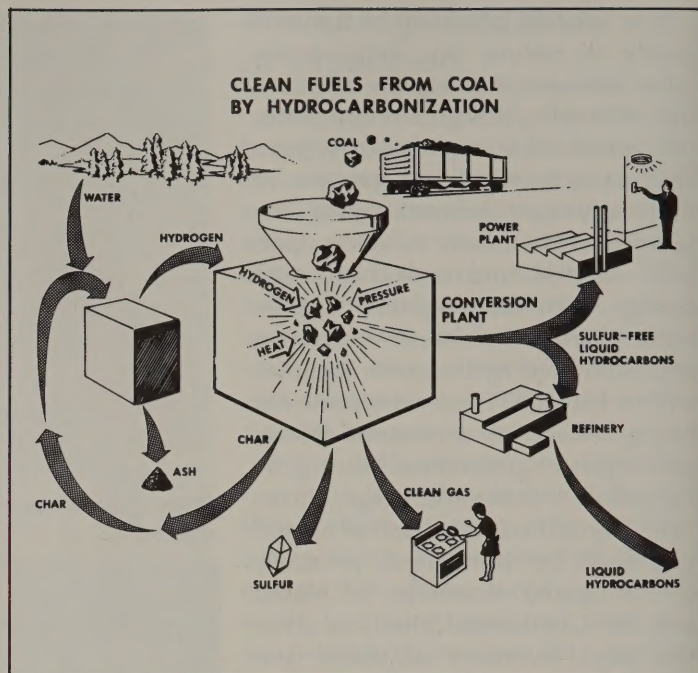
Our principal reliance has been upon oil and natural gas, which together supply more than three-fourths of our total energy requirements. Today in America, there is a market shortage of natural gas and a production shortage of oil which has been masked by rapidly rising imports, and we have been obtaining more than a third of our petroleum supply from other countries. The U. S. Geological Survey concluded in 1975 that our own oil and gas resources are past their prime, and that the accelerated trends of production and use in the past decade are no longer supportable by the remaining resource base.

It is now an objective of national policy to reduce our dependence upon foreign oil as rapidly as possible. Achieving this goal requires not only a reduction in oil imports, but a shift away from oil and gas toward more abundant domestic energy resources. This means reliance upon coal, shale oil, and nuclear and solar energy, with such regional supplements as geothermal development and expanded hydropower facilities where feasible. Even tidal power is being revived as a concept for regional power generation. During the extended transitional stage, however, domestic production of oil and gas must be stimulated, primarily the untapped resources of Alaska and the Continental Shelf, to serve the large inventory of plants and equipment which can use no other fuels.

Inherent in all of this development is the problem of environmental cost — who shall bear it, and how to minimize it. These issues can be sectionally divisive, raising political and social and economic challenges to test the mettle of a Nation that prides itself on its ingenuity in turning problems into advantages.

Some of the newer schemes for harnessing energy.





Hard Rock Hardships

The condition of the Nation's non-fuel mineral supply has much in common with that of energy. Currently, the United States depends on foreign sources for more than half its supply of 20 vital minerals, and for more than one fourth of its supply for 10 others. Discovery of new sources at home tends to be ever more difficult as each year's efforts winnow out the largest and most accessible of the remaining deposits. Progressively leaner ore bodies require more energy for mining and processing and entail more land disturbance than ever before. Potentially valuable by-product minerals end up in tailings and slag piles because they cannot now be economically recovered. Vexing problems relating to air and water pollution involved in mineral processing remain to be solved. The substitution of abundant light metals for scarce heavy ones involves geometric increases in energy consumption at a time when energy conservation is the order of the day.

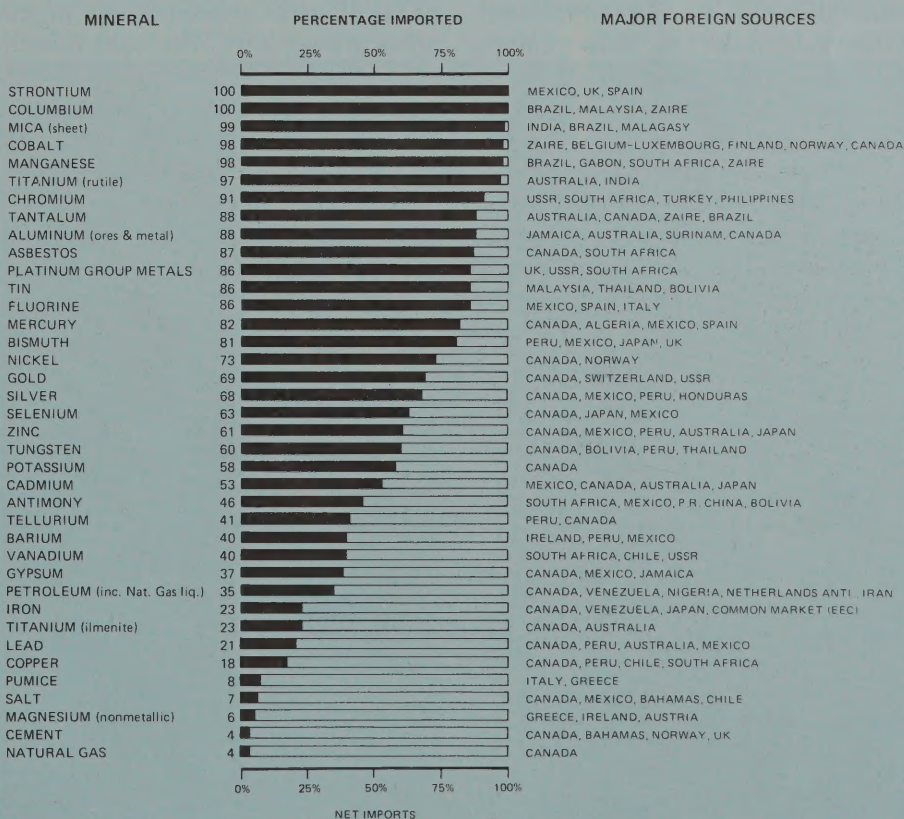
By and large the solutions to these problems are to be found in the same kinds of actions now being pursued in the case of energy: redoubled efforts to discover new deposits; improved extraction techniques which enable the economic production of deposits now classified as submarginal; the substitution of scarce resources with others that are more plentiful; the elimination of waste and increased efficiency in consumption. To these actions can be added one more remedy: improved reclamation and recycling of used materials. This practice is well advanced in the case of steel, copper, and lead, but much less so for aluminum and tin. Even so, a vast treasure trove of reclaimable metals of all kinds exists in the Nation's automobile junk yards and municipal dumps which can be exploited not only to extend the supply of metals, but to clean up the landscape and conserve energy expenditure as well. It requires only one-fifth as much energy to make a ton of steel

out of scrap as it does from iron ore. Recycled copper takes only about one-twentieth as much energy as virgin copper, and reprocessing scrap aluminum takes only 4 percent of the energy required to produce the metal from bauxite.

Most of these problems are the classic difficulties that have always beleaguered the minerals industries, and the Department of the Interior has a long record of productive association with the private sector in helping to obtain interim solutions. It expects to continue this practice, aware that the limitations to be contended with are not inherent in the resources themselves, but are the product of human institutions and hence susceptible of reduction by human ingenuity and perseverance.

(Opposite Page) At top, an offshore oil rig; below, a demonstration plant to convert coal to clean, gaseous energy.

IMPORTS SUPPLIED SIGNIFICANT PERCENTAGE OF TOTAL U.S. DEMAND IN 1974



U. S. BUREAU OF MINES (import-export data from U. S. Bureau of the Census)

Water — But Not Everywhere

Water for agricultural irrigation, power generation, recreation and industrial and municipal use is theoretically adequate *in toto*, but suffers from the fact that it is often not available where and when it is needed. West of the 100th meridian, water is generally scarce, and will remain so, even under the best efforts toward conservation and diversion from more plentiful sources; even the East has had reminders during the past decade that water is not always and everywhere available in adequate supply. Demand for water is expected to double during the last quarter of the 20th century, and its allocation and distribution will be a major consideration in the future.

The disappearance in the early 1970's of the grain surpluses which had been around for as long as most Americans could remember is in itself a remarkable development which deserves more attention than it has received. The long-standing anomaly of spending money to reclaim new lands for agriculture while paying subsidies to keep existing acreage out of production was over at last. For the foreseeable future, there will be a demand for all arable land that can be put under cultivation. America is now the breadbasket of the world, and its agricultural exports in 1973, for example, earned \$17 billion in needed foreign exchange.

But this kind of production level presents a new dilemma. At a time when we need maximum food production, we also need more water for energy production. But water itself is a limited natural resource. In elemental terms, food production is part of the overall energy supply system, to which the Bureau of Reclamation has long contributed through its mission of reclaiming arid lands for crops. For example, in 1974 crops produced on lands irrigated by Reclamation projects provided enough food for 33 million people annually.

The Reclamation Bureau's related mission of hydroelectric power development is a better known source of energy supply. Hydroelectric installations account for about 16 percent of the Nation's total output of electricity and about 4 percent of its total energy consumption. It is the cleanest and cheapest of all energy sources and depletes no exhaustible materials. While environmental questions have been raised, the benefits of water impoundment in arid areas are weighty. The contribution of hydroelectric production in 1974 was the equivalent of 550 million barrels of oil, or 3 trillion cubic feet of natural gas. Even though its op-

portunities for expansion are limited by topography, the Nation's total potential for hydropower is only one-third developed, and existing production could double over the next two decades — if environmental problems can be substantially mitigated.

The added demand for water implicit in plans to develop the coal and oil-shale lands of the arid West creates an entire new order of problems to be solved. To operate a 50,000-barrel-a-day shale oil plant requires between 6,000 and 11,000 acre-feet of water per year. A coal mine producing 5 million tons a year would require 3,000 acre-feet of water to move its product by slurry pipeline to markets 800 miles away. If the coal were converted to electricity at mine mouth, the water requirements would be about 19,000 acre-feet per year for a wet-cooled 1,000 megawatt power station. A coal gasification plant producing 250 million cubic feet a day might take as much as 30,000 acre-feet of water a year, or as little as 10,000 with complete recycling and treatment at substantially greater costs. Water availability will be an important — and often a limiting — factor in the development of energy in the West.



Multiples of Multiple Use

Conflicts and dilemmas over the allocation of resources are by no means new, and are elaborately documented in the disputes over access of land and water that raged among farmers, stockmen, miners, railroad companies, timber companies, states and municipalities and Indian tribes over the last century. For the most part these disputes, bitter as they may have been, were usually quieted by the fact that after all the shoving and jostling had taken place it was discovered that there was enough room for everybody — enough, in fact, to permit a large measure of exclusivity in the use of the resources by the rival claimants.

Today, such a degree of flexibility is no longer possible. The crowding produced by a large and mobile population, coupled with its vastly increased demands for energy and material goods, dictates a degree of sharing that would have been neither necessary nor acceptable to earlier generations. The demands are too great and the limitations too

restrictive to permit public resources which could satisfy a number of valid use requirements to be dedicated exclusively to one. The great abiding necessity is for accommodation among many discrete and often conflicting demands that are bound to increase in scope over the foreseeable future.

Given this condition, it is inevitable that the Federal Government and its agencies should be deeply affected by the rising complexities of multiple-use arrangements — and none more profoundly than the Department of the Interior. It administers hundreds of millions of acres of Federal and Indian lands. It has custody of 80 percent of the Nation's shale oil resources, 40 percent of its coal (including 90 percent of the coal lying west of the Mississippi River), all the oil, natural gas, and other resources located on the Outer Continental Shelf, and most of the undeveloped hydroelectric sites and geothermal resources. It manages 113 million acres of public forest and woodlands and 158 million acres of public range lands. After nearly a

(Opposite Page) The shale rock mountains of the West were a challenge to oil seekers more than half a century ago. This was an early plant in Colorado, where shale was dug out, crushed and heated until oil ran.

(This Page) A modern geothermal pipeline, tapping the energy from subterranean steam pockets.

(Next Page) Cape Cod and San Francisco Bay as the Earth Resources Observation Satellite recorded them.



century of presiding over the divestiture of the Nation's landed estate, the Department now has the mission to conserve and develop to maximum potential the portion which remains — an area equal in size to both Texas and Alaska.

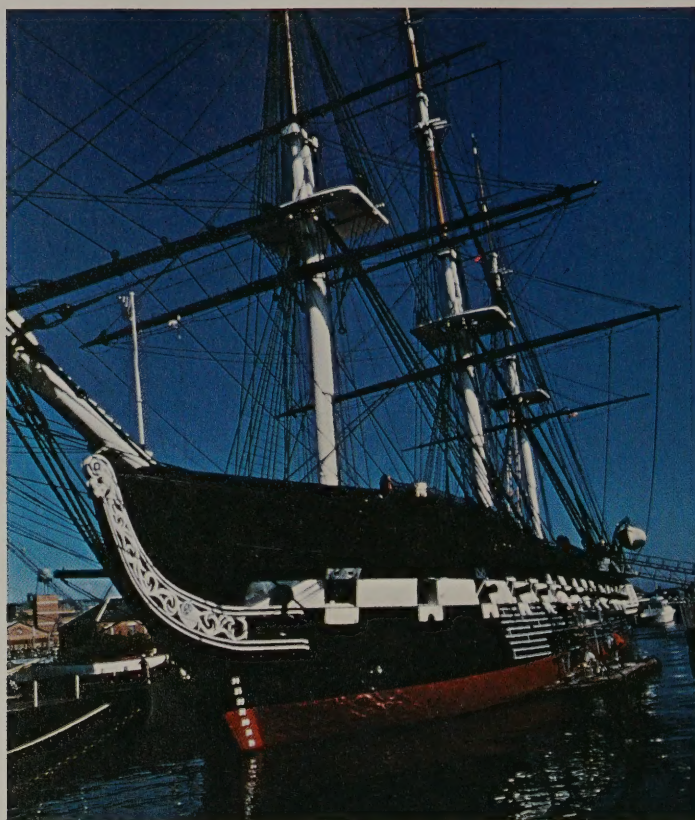
Multiple use, both concurrent and sequential, must of necessity be a cornerstone of public policy addressed to the development and use of national resources in the future. Together with conservation, it offers a practical way by which our large and growing population can be sustained in relatively comfortable circumstances within limits which are fixed in breadth but not in depth. For the truth is that, while the boundaries determined by geography have been reached, the ones determined by human ingenuity and creativity are at best only dimly perceived, if sighted at all. We have been challenged to do more with what we have been given, and so we shall. We can do this by sharing, eliminating the waste attendant to the exclusive use of public resources, orienting our technology toward more efficient ways of producing energy and materials and our habits toward more efficient ways of using them, and adopting an ethic which says that there is not necessarily a relationship between price and value, and that if something is useful or attractive, it has value and ought to be respected whether it carries a price or not.

It is 1976. The Nation's boundaries have long been established, the wilderness tamed, the unknown hinterlands thoroughly explored, traversed, and settled. But as the old frontiers are reached and conquered, new ones continually arise, so that we can never regard our work as finished. In fact, it is only fairly begun. We have more than 70,000 days ahead in which to complete the Great Experiment before our Quadricentennial — but unless we move within *this* century to achieve the ideal balance between environmental preservation and resources development, the future will not be like the rosy past.



A Bicentennial Montage





(Cover) Cannons at Yorktown. The battlefield, a huge plain overlooking the James River in Virginia, has been carefully restored by the National Park Service for Bicentennial sightseers.

(Above) The *United States Constitution*, "old Ironsides", is undergoing the latest of several drydock overhauls in readiness for visits to several U.S. ports in 1976. The Boston Yard is home base. The *Constellation*, docked at Ft. McHenry, Maryland.

Congress saw fit to appropriate to the Department of the Interior, particularly earmarked for the National Park Service, about \$100 million to preserve, restore, refurbish and embellish historic sites and buildings that are part of the Nation's 200-year heritage. For more than three years prior to Independence Day 1976, a cadre of archeologists, artists, architects, engineers, historians, film-makers, dramatists and writers have been at work to bring history alive.

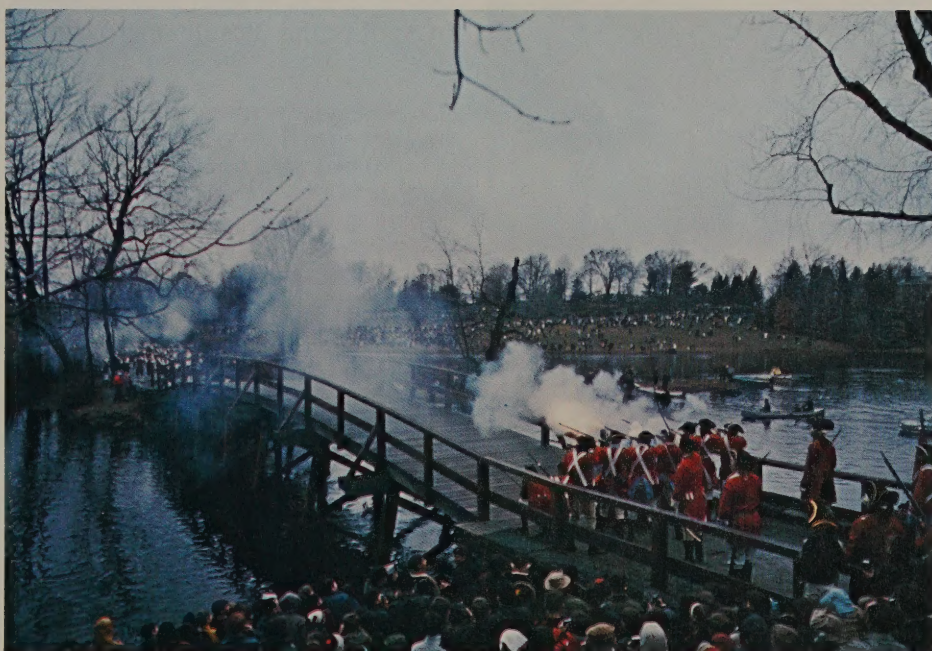
Twenty-three major historic sites were designated for restorative improvement, from New England and New York southward. In cooperation with the City of Boston, historic Faneuil Hall, Old North Church and other Revolutionary War symbols have undergone structural restoration to preserve them for many more millions of American feet to trod and eyes to see. In cooperation with the Navy, the battleship *Constitution* is being restored, and will be visiting many American ports during the Bicentennial year.

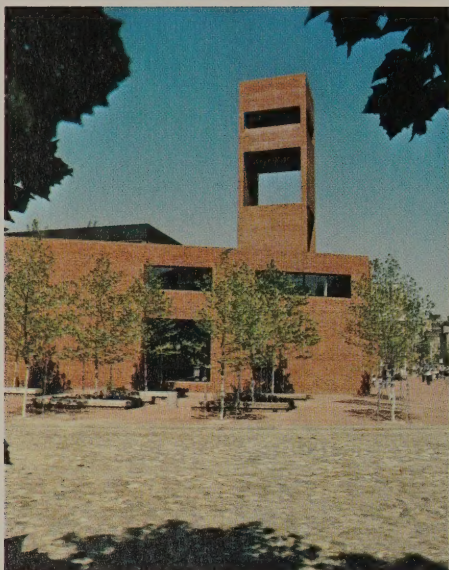
The signal Bicentennial event was the re-enactment of the Battle of Lexington and Concord, on April 19, 1975, with future special celebrations scheduled for the Continental Army's Morristown encampment, Fort Moultrie, South Carolina, and Fort Stanwix, New York. One of the major efforts has been refurbishment of Independence Square, Philadelphia, which includes the restoration of Independence Hall and adjacent structures, the construction of an outdoor glass pavilion to house the old Liberty Bell, and the erection of a modern brick bell tower to accommodate a new bell, cast at the same London foundry more than two hundred years later, a presentation from the British Government.

Special activities of a variety of kinds are scheduled at most of the 286 national parks and historic sites during the Bicentennial period, 1975 and 1976, some of the most colorful of which are to be staged in the Nation's Capital in and around the scene of a new recreational area, Constitu-



The Bicentennial Era began April 19, 1975, with a day-long re-enactment of the Battle of Lexington and Concord at Minuteman National Historic Park in Massachusetts. Here are two scenes from that event, for which viewers by the hundreds of thousands began congregating the night before.





tion Gardens. In many other communities the Interior Department is cooperating with local civic groups and Bicentennial agencies to develop commemorative programs that celebrate the land.

In the Far West, the Pony Express, Escalante and Oregon Trails will have historic interpretive sites at points where these old migration paths now cross modern highways. The Bureau of Land Management will complete these projects for the Bicentennial Year travelers.

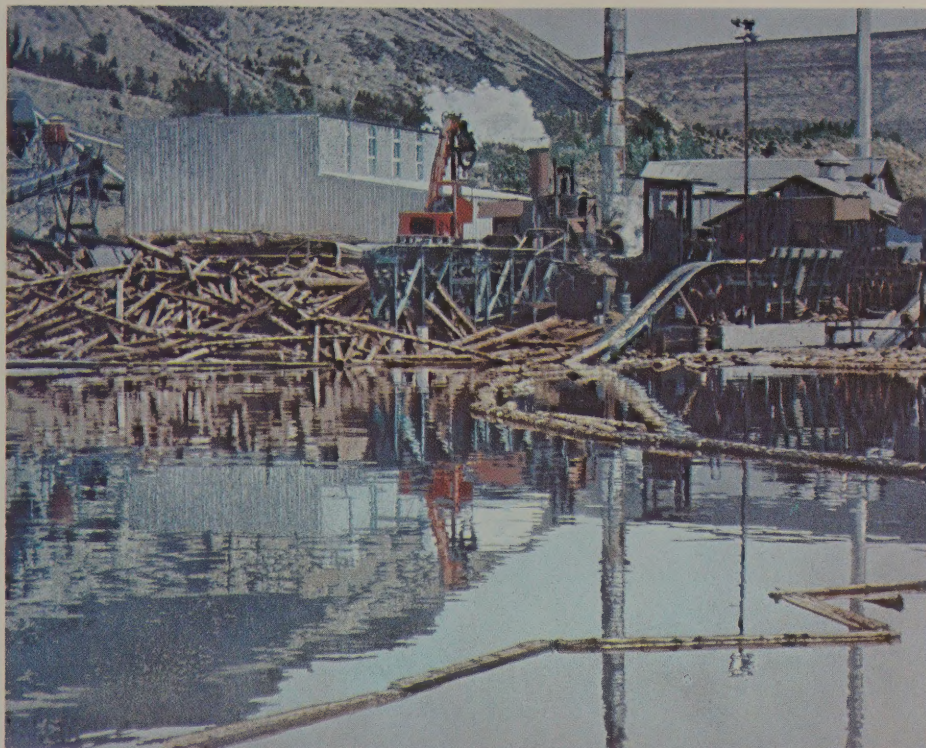
One of the most important of the heritage events sponsored by the Department of the Interior has been the commissioning of more than 40 prominent contemporary American painters to produce special works signifying the majesty of America's public lands. The exhibition will tour the world after its 1976 national tour, which opens in Washington, D.C., in April of the Bicentennial Year.

(Top of Page) The new visitor center at Independence National Historic Park in Philadelphia sports a bell tower that awaits installation of a brand new liberty bell, to be presented by Great Britain in 1976. The same foundry that cast the original Liberty Bell will produce the new edition. Bell-giving has become a tradition.

The cherished, but, alas, cracked first edition Liberty Bell will be permanently on display for all to see in a ground-level pavilion. A model of the structure is shown here.

(Center) The Salem Maritime Museum, another of the Bicentennial high points in Massachusetts, now under care of the National Park Service.

(Bottom) By the rockets' red glare at Fort McHenry, where the broad stripes and bright stars fly proudly.



The paintings on this page and on the following pages are among the collection created for Department of the Interior's Bicentennial exhibition. Forty-five prominent American painters representing all regions of the United States are participating.

John Clem Clarke's "Indian Sawmill" depicts the lumbering operation owned by the Confederated Tribes of the Warm Springs Indian Reservation in Oregon.

Susan Shatter's awesome scene overlooks public lands along the Colorado River near Moab, Utah.



John Heliker's "Acadia National Park" shows the rockbound coast of Maine in its gentler season.

Joseph Raffael calls his medley in oils "Island Magic." It portrays tropical plants from the wildlife refuges of Hawaii.

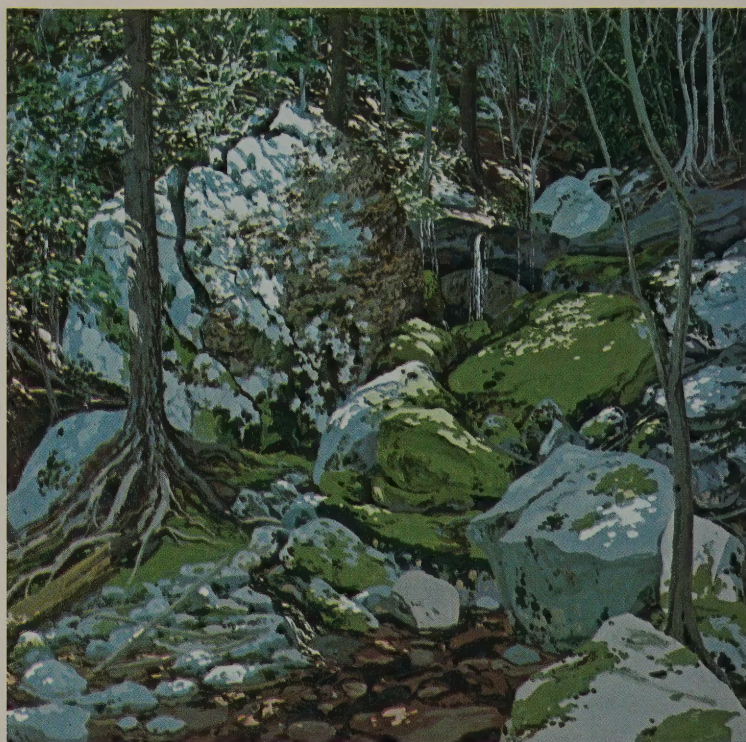




Chincoteague Refuge, Virginia, as seen through the eyes of artist Jack Beal.

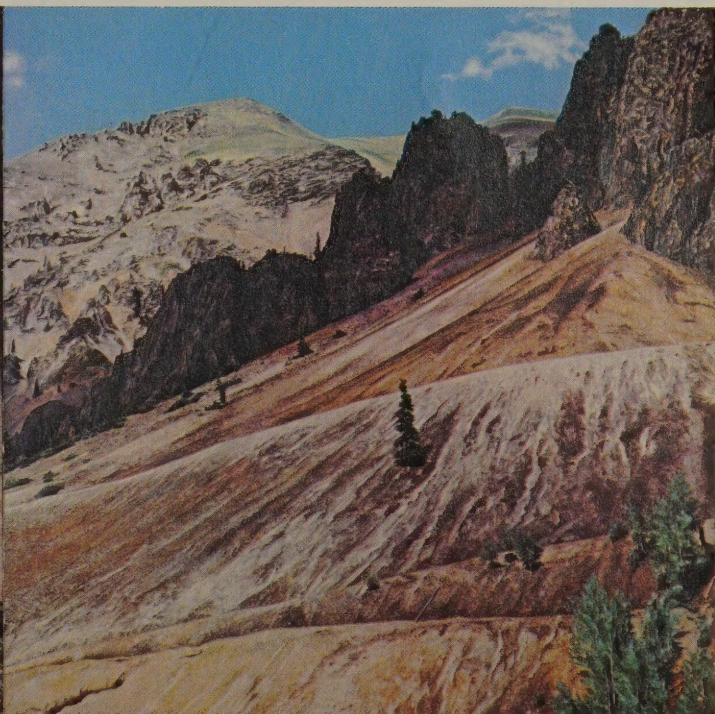
Roy Schnackenberg adds the whimsy of red roses to his wintry painting of Mt. Brooks in Alaska.





(Below) Lennart Anderson's portrayal of landscape at Sleeping Bear Dunes National Lakeshore, Michigan.





(Opposite Top, and Above) A landscape by Neil Welliver and a portrait of a moose by Alex Katz, both inspired by the wilderness of Moosehorn Refuge in Maine.

The Continental Divide as Ben Schonzeit sees it.

Appendices

Secretaries of the Interior

Presidential Administration	Secretary	Date of Service
Zachary Taylor	Thomas Ewing	1849-50
Millard Fillmore	Thomas M. T. McKennan	1850
	Alex H. H. Stuart	1850-53
Franklin Pierce	Robert McClelland	1853-57
James Buchanan	Jacob Thompson	1857-61
Abraham Lincoln	Caleb B. Smith	1861-63
	John P. Usher	1863-65
Andrew Johnson	James Harlan	1865-66
	Orville H. Browning	1866-69
Ulysses S. Grant	Jacob D. Cox	1869-70
	Columbus Delano	1870-75
	Zachariah Chandler	1875-77
Rutherford B. Hayes	Carl Schurz	1877-81
James A. Garfield	Samuel J. Kirkwood	1881
Chester A. Arthur	Samuel J. Kirkwood	1881-82
	Henry M. Teller	1882-85
Grover Cleveland	Lucius Q. C. Lamar	1885-88
	William F. Vilas	1888-89
Benjamin Harrison	John W. Noble	1889-93
Grover Cleveland	Hoke Smith	1893-96
	David R. Francis	1896-97
William McKinley	Cornelius N. Bliss	1897-98
	Ethan A. Hitchcock	1898-1901
Theodore Roosevelt	Ethan A. Hitchcock	1901-07
	James R. Garfield	1907-09
William Howard Taft	Richard A. Ballinger	1909-11
	Walter L. Fisher	1911-13
Woodrow Wilson	Franklin K. Lane	1913-20
	John B. Payne	1920-21
Warren G. Harding	Albert B. Fall	1921-23
	Hubert Work	1923-25
Calvin Coolidge	Hubert Work	1925-28
	Roy O. West	1928-29
Herbert C. Hoover	Ray Lyman Wilbur	1929-33
Franklin D. Roosevelt	Harold L. Ickes	1933-45
Harry S. Truman	Harold L. Ickes	1945-46
	J. A. Krug	1946-49
	Oscar L. Chapman	1949-53
Dwight D. Eisenhower	Douglas McKay	1953-56
	Fred A. Seaton	1956-61
John F. Kennedy	Stewart L. Udall	1961-63
Lyndon B. Johnson	Stewart L. Udall	1963-69
Richard M. Nixon	Walter J. Hickel	1969-70
	Rogers C. B. Morton	1970-74
Gerald R. Ford	Rogers C. B. Morton	1974-75
	Stanley K. Hathaway	1975
	Thomas S. Kleppe	1975-

Major Legislative Authorities Of The Department Of The Interior

- 1849 Act of March 3d created the Department of the Interior
- 1862 Homestead Act — Authorized free public lands to bona fide farmers and stockmen who would develop permanent farms and ranches. (43 USC 161-302)
- 1872 Mining Law — Promoted private prospecting and development of metallic minerals by protecting private interests in mining claims. (30 USC 22)
- 1872 Yellowstone Act establishing a new policy for public land use, creating the first national park in the world.
- 1873 Act of March 1st assigned to the Department of the Interior all territorial powers and duties previously performed by the State Department. The Act applied to all organized territories, existing or to be created later. (17 Stat. 484)
- 1879 Act of March 3d established the Geological Survey as a bureau of the Department of the Interior. (43 USC 31)
- 1902 Basic Reclamation Act establishing a system of water development projects for the irrigation of arid lands and other purposes. (43 USC 372,3; 391,2; 411,16,19,21,31,32,34,39,61,91,98)
- 1906 American Antiquities Act — Authorized the establishment of national monuments on federal lands. (16 USC 431)
- 1910 Act of May 16th created the Bureau of Mines under the Department of the Interior to promote mining technology and mine safety research. (30 USC 1,3,5-7)
- 1916 Act of August 25th created the National Park Service to administer a park system consisting of national reservations, national monuments, and areas of historic and scientific significance. (16 USC, 1-4)
- 1918 Migratory Bird Treaty Act, as amended — Implements treaties with Great Britain (for Canada), Mexico and Japan for protection of migratory birds. (16 USC 703-711)
- 1920 Mineral Leasing Act — Authorizing Federal leasing of public lands for private extraction of oil, gas, coal, phosphate, sodium and other minerals. (30 USC 181-287)
- 1934 Fish and Wildlife Coordination Act — Authorized Federal/State cooperation in wildlife conservation and restoration programs. (16 USC,661-666c)
- 1934 Migratory Bird Hunting Stamp Act (Duck Stamp Act) — Requires licensing for waterfowl hunting, proceeds of which are used to support national wildlife refuge system. (16 USC 718-718h)
- 1934 Taylor Grazing Act — Authorizes the establishment of grazing districts and rules for their occupancy and use. (43 USC 315)
- 1934 Indian Reorganization Act — Enabled tribal governments to be constituted and repealed earlier law ordering individual land allotments in lieu of tribal holdings. (25 USC 476)
- 1934 Johnson O'Malley Act — Provides Federal aid for education of Indians (in addition to and also available through all later general Federal aid laws for education). (25 USC 13,452)

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- 1934 Federal Aid in Wildlife Restoration Act, as amended — This Act, also known as the Pittman-Robertson Act, provides Federal aid (from excise taxes on sporting arms and ammunition) to the States for wildlife restoration work. (16 USC 669-669i)
- 1935 National Historic Sites and Buildings Act — Established a national policy for the preservation of historic sites, buildings and objects of national interest and significance. (16 USC, 462-467)
- 1937 Bonneville Project Act — Established the Booneville Power Administration to market power from the first Federal hydroelectric development on the Columbia River. (16 USC 832)
- 1939 Reclamation Project Act — Enunciated a number of important new policies the most important of which was the expansion of the Reclamation program to include multiple water uses. (43 USC 375a,387-89,485,485a-485k)
- 1944 Synthetic Liquid Fuels Act — Authorized the construction and operation of demonstration plants to produce synthetic liquid fuels from coal, oil shale and agricultural and forestry wastes. (30 USC 321-325)
- 1944 Flood Control Act, section of which authorizes the Department of the Interior to market power from Army projects (33 USC 701-1,16 USC 825s)
- 1950 Federal Aid in Fish Restoration Act, as amended — This Act, also known as the Dingell-Johnson Act, provides Federal aid (from excise taxes on sport fishing tackle) to the States in sport fish restoration work. (16 USC 777-777k)
- 1952 Saline Water Act — Authorized research and development related to economical production of water for agricultural, industrial, municipal and other beneficial uses from sea or water from brackish inland sources. (68 Stat. 328)
- 1953 Outer Continental Shelf Lands Act — Conferred the authority exercised by the United States over the lands on the Continental Shelf (beyond that ceded to the States in the Submerged Lands Act) upon the Secretary of the Interior. The Act provided the legal framework for orderly exploration and development of underwater resources of the Outer Continental Shelf. (43 USC 1331)
- 1956 Fish and Wildlife Act — Established the U.S. Fish and Wildlife Service. (16 USC, 742a-742j)
- 1958 Saline Water Demonstration Plant Act — Amendment broadens the Saline Water Act of 1952, which authorized research and development of water from sea or brackish inland sources. (42 USC 1951)
- 1964 Coordination and Development of Outdoor Recreation Programs — The Bureau of Outdoor Recreation "Organic Act". (16 USC 460L)
- 1964 Land and Water Conservation Fund — Authorized a major new program of Federal matching grants to States for acquiring and developing outdoor recreation areas. (16 USC, 460L-4)
- 1964 Wilderness Act — Established a National Wilderness Preservation System.(16 USC, 1131)
- 1964 Water Resources Research Act — A measure aimed at solving the Nation's increasing water problems, providing Federal financial aid to support special research centers at State land-grant universities or at others designated by the State to work on critical water-supply situations. (42 USC 1951)

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- 1965 Water Resources Planning Act — Created the Cabinet-level Water Resources Council, chaired by the Secretary of the Interior, to help foster full Federal-State cooperation in working out regional plans for water development.
- 1966 National Historic Preservation Act — provides for an expanded National Register of properties and establishes a matching grant program for planning, acquisition and restoration. (16 USC 470)
- 1966 Federal Metal and Nonmetallic Mine Safety Act — Paralleling earlier coal mine safety law. (30 USC 721-740)
- 1966 National Wildlife Refuge System Administration Act — This law constitutes an “Organic Act for the Fish and Wildlife Service”. (16 USC 668dd-668ee)
- 1968 Wild and Scenic Rivers Act — Set basic procedures for a nationwide system of unspoiled rivers in wild and scenic areas. (16 USC 1271)
- 1968 National Trails System Act — Set basic procedures for setting up a National Trails System to provide opportunities for hiking, walking, bicycling and other activities in metropolitan, rural and back country areas. (16 USC 1241)
- 1969 Federal Coal Mine Health and Safety Act — To foster the health and safety of persons working in the coal mining industry, superseding earlier legislation. (30 USC 801-878;951-960)
- 1970 Mining and Mineral Policy Act — Established a national mining and minerals policy to promote the wise and efficient use of our natural and reclaimable mineral resources. (30 USC 21)
- 1970 Geothermal Act of 1970 — Authorizes the Secretary of the Interior to make disposition of geothermal steam and associated geothermal resources on public lands. (30 USC, 1001-1025)
- 1971 Alaska Native Claims Settlement Act — To settle Indian and Eskimo claims originating from Alaska purchase and provide for federal and state public land selections. (43 USC 1601)
- 1972 Marine Mammal Protection Act — Provides for the conservation and management of marine mammals. (The Department of the Interior is responsible for the sea otter, walrus, polar bear, dugong and manatee) (P.L. 92-522)
- 1973 Endangered Species Act — Provides authority and policy guidance for the conservation, restoration and propagation of endangered and threatened species of fish, wildlife and plants. (16 USC 668)
- 1974 Indian Financing Act — Provides for financial assistance in the economic development of Indians and Indian organizations. (88 Stat. 77)
- 1974 Indian Self-Determination and Education Assistance Act — Sets the stage for major changes in the relationships of Indian tribes with the Federal government by authorizing them to take over the directions and operation of Federal programs serving them. (88 Stat. 2203)



**United States
Department of the Interior
Washington, D.C. 20240**

Thomas S. Kleppe, Secretary of the Interior

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